

U.S. PROFESSIONAL SERVICES OPPORTUNITIES
FOR CUSTOMER SERVICE ORGANIZATIONS

1990

INPUT

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Customer Service Program (CSP)


***U.S. Professional Services Opportunities for
Customer Service Organizations, 1990***

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Abstract

This report from INPUT identifies the broad professional services opportunities for customer service vendors seeking to address the key issues related to the declining growth of equipment maintenance revenues.

The report identifies opportunities available for customer service vendors to enter the market, provides a matrix for mapping skill sets against market needs, gives market-based recommendations, and suggests strategies for maximizing these opportunities. The report estimates current levels of market development and penetration, including market forecasts.



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Table of Contents

I	Introduction	1
	A. Purpose	1
	B. Definitions	3
	C. Methodology	4
	D. Sources of Detailed Market Information	6
II	Executive Overview	7
	A. Reasons for Assessing the Professional Services Market	7
	B. Professional Services Components	9
	C. Opportunities for Customer Service Organizations	12
	D. Entry Strategies	14
III	Scoping the Opportunity	17
	A. Why Professional Services?	17
	B. Professional Services Overview	21
IV	Standalone Professional Services	27
	A. Overview	27
	B. Consulting Services	29
	C. Applications Development/Maintenance	32
	D. Competitive Environment	35
V	Integrated Services	39
	A. Systems Integration	39
	B. Integrated Services Compared to Standalone Professional Services	46
	C. Turnkey Systems	49

Table of Contents (Continued)

VI	Systems Operations	53
	A. Overview	53
	B. Customer Motivations	56
	C. Opportunity Analysis	58
<hr/>		
VII	Conclusions and Recommendations	63
	A. Summary of Opportunities	63
	B. Success Factors	65
	C. Impact of Recession on Professional Services	68
	D. Recommendations	69

Exhibits

I	<ul style="list-style-type: none"> -1 Information Services Industry Structure -2 INPUT Research Methodology 	<ul style="list-style-type: none"> 2 5
II	<ul style="list-style-type: none"> -1 U.S. Customer Service Market Forecast, 1989-1994 -2 U.S. Professional Services Component Growth, 1989-1994 -3 Information Services Opportunities in Relation to Customer Service -4 Professional Services Functions -5 Differences between Standalone Professional Services and Systems Integration -6 Professional Services Opportunities for Customer Service Organizations: Summary -7 Impact of Recession on Selected Professional Services -8 Stages of Professional Services Development -9 Opportunity Examples 	<ul style="list-style-type: none"> 7 8 9 10 11 12 13 14 15
III	<ul style="list-style-type: none"> -1 U.S. Customer Service Market Growth by Product Type, 1989-1994 -2 Western European Customer Service Market Growth, 1989-1994 -3 U.S. Information Services Market, 1989-1994 -4 Western European Information Services Market, 1989-1994 -5 Information Services Opportunities in Relation to Customer Service -6 Professional Services Components of Information Services/Customer Services -7 Professional Services Functions -8 U.S. Professional Services Component Growth, 1989-1994 -9 Professional Services Market Structure Based on Category of Services Provider 	<ul style="list-style-type: none"> 17 18 19 20 21 22 23 24 25

Exhibits (Continued)

IV

-1	Standalone Professional Services Market Forecast	27
-2	U.S. Standalone Professional Services Market by Submode, 1989-1994	28
-3	Professional Services Skills Hierarchy	29
-4	Standalone Professional Services Expenditures by Application Area, 1989	30
-5	Standalone Professional Services User Expenditures by Industry, 1989-1994	31
-6	Applications Support Constituents	32
-7	Volatility Factors	33
-8	Application Sources	34
-9	Application Support Opportunity: Mobilizing Resources	35
-10	Leading Standalone Professional Services Firms	36
-11	Leading Commercial Professional Services Firms	37

V

-1	U.S. Systems Integration Market by Component, 1989-1994	40
-2	Professional Services Components of Systems Integration	41
-3	Systems Integration Motivators	42
-4	Commercial Systems Integration Project Value and Expenditures, 1989-1994	43
-5	U.S. Systems Integration Market by Sector, 1989-1994	44
-6	U.S. Systems Integration Market by Industry Sector, 1989-1994	45
-7	Systems Integration Vendor Examples by Class	46
-8	Differences between Professional Services and Systems Integration	47
-9	Professional Services Delivery Alternatives	48
-10	Stages of Professional Services Development	49
-11	Turnkey Systems Market Forecast by Product and Service Component, 1989-1994	50
-12	Differences between System Integrators and Turnkey System Vendors	51
-13	The Customization Spectrum	51

VI

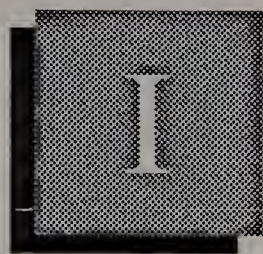
-1	Systems Operations Market by Delivery Mode	54
-2	Characteristics of Types of Systems Operations	55
-3	Systems Operations Efficiency Yields Profits	55
-4	Systems Operations Skill Sets	56
-5	Subjective Factors Affecting Systems Operations Decision	57
-6	Systems Operations: Opportunity Schematic	58

Exhibits (Continued)

-7	Opportunity Examples	59
-8	Stages of Professional Services Development	60
-9	Leading Systems Operations Vendors (Non-Federal)	60

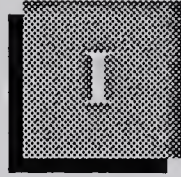
VII

-1	Professional Services Opportunities for Customer Service Organizations: Summary	64
-2	Consulting-Related Success Factors	65
-3	Development/Operations-Related Success Factors	66
-4	Professional Service Success Factors: Relative Importance by Functional Area	67
-5	Impact of Recession on Selected Professional Services	69
-6	Recommendations	70



Introduction





Introduction

A

Purpose

For many years, customer service organizations have been providing one specialized form of professional services. For many equipment manufacturers, customer services are still by far the predominant form of services offered.

Many customer services organizations are already involved in professional services through varied ancillary services. Some of these organizations are examining expansion of these and related services into new areas.

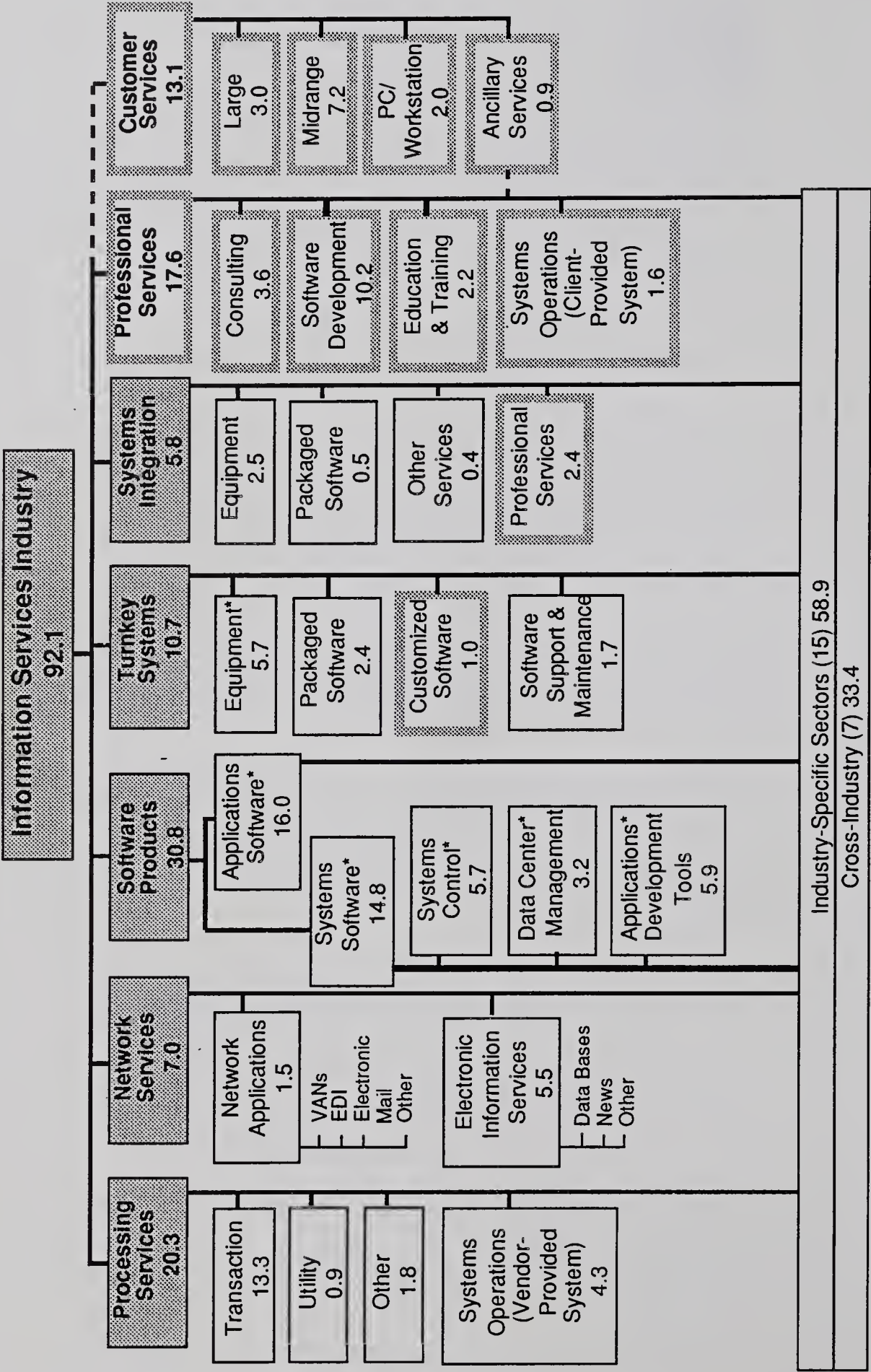
There are a number of other types of professional services offered under the broad heading of information services. Exhibit I-1 shows the overall information services industry and its relation to customer services. (Chapter III will analyze in detail the sizes and expected growth rates of the different professional services sectors and compare them to customer services.)

This report will examine these other professional services to provide customer services management with the following information:

- An understanding of the composition of professional services, in general and in specific subsectors
- Size and expected growth of professional services
- Definitions of professional services and the skill sets employed
- Positive and negative forces affecting professional services growth and profitability
- Success factors for different professional services sectors

EXHIBIT I-1

Information Services Industry Structure



*Broken out by Workstation/PC, Minicomputer, and Mainframe segments
1989 Revenue (\$ Billions)

Professional Services

Source: INPUT

- Templates for assessing current customer service skills and the requirements needed to succeed in the various professional services sectors

B

Definitions

Professional services includes consulting, education and training, programming and analysis, and some systems operations as defined below:

- **Software development**—This service develops custom software systems. It includes one or more of the following: establishing user requirements, designing systems, contracting and programming. These activities may be for the development of new software, modifications to existing software, or maintaining existing software.
- **Education and Training**—Products and/or services related to information systems and services for the user, including computer-aided instruction (CAI), computer-based education (CBE), and vendor instruction of user personnel in operations, programming, and maintenance
- **Consulting Services**—Information systems and/or services, management consulting, program assistance (technical and/or management), feasibility analyses, and cost-effectiveness trade-off studies
- **Systems Operations (formerly Facilities Management)**—Professional services systems operations is the provision by a third-party vendor of only the staff that is needed to manage, operate, and maintain all or part of a user's information systems department. In this case, the computer and communication systems are owned or leased by the client, not the vendor.

As a matter of convention, throughout this report the term professional services will *not* include customer services, unless specified. This is done to clarify differences between the two, especially when contrasting such items as rates of growth.

There are also professional services components within systems integration and turnkey systems. The characteristics of these two delivery modes are as follows:

- **Systems Integration**—Services associated with systems design, integration of computing components, installation, and acceptance of computer/communication systems. Systems integration can include one or more of the major information services delivery modes: professional services, turnkey systems, and software products. System components may be furnished by separate vendors (not as an integrated system by one vendor, called the prime contractor), and services may be furnished by a vendor or by a not-for-profit organization. Integration services may also be provided with related engineering activities, such as SE&I

(Systems Engineering and Integration) or SETA (Systems Engineering and Technical Assistance).

- Turnkey Systems (also known as integrated systems)—A turnkey system is an integration of systems and applications software with CPU hardware and peripherals that is packaged as a single applications solution. The value added by the vendor is primarily in the software and support. Most CAD/CAM systems and many small business systems are turnkey systems. This does not include specialized computer hardware systems such as word processors, cash registers, or process control systems, nor does it include embedded computers used for military applications. Turnkey systems are available either as custom or packaged systems.
- Computer hardware vendors that combine software with their own general-purpose hardware are not classified by INPUT as turnkey vendors.
- Professional services activities include education and training, integration with other systems/applications, software modification, and customization and hardware modification, which is becoming increasingly rare.

C

Methodology

This report draws on the research conducted on professional services opportunities within information services during the latter part of 1989 and the first half of 1990.

INPUT's methodology for data collection, analysis, and forecasting is depicted in Exhibit I-2. INPUT conducted over 1,000 in-depth interviews, which included nearly all of the 250 largest information services vendors. The smallest of this group of 250 vendors had about \$22 million in revenues in 1988.

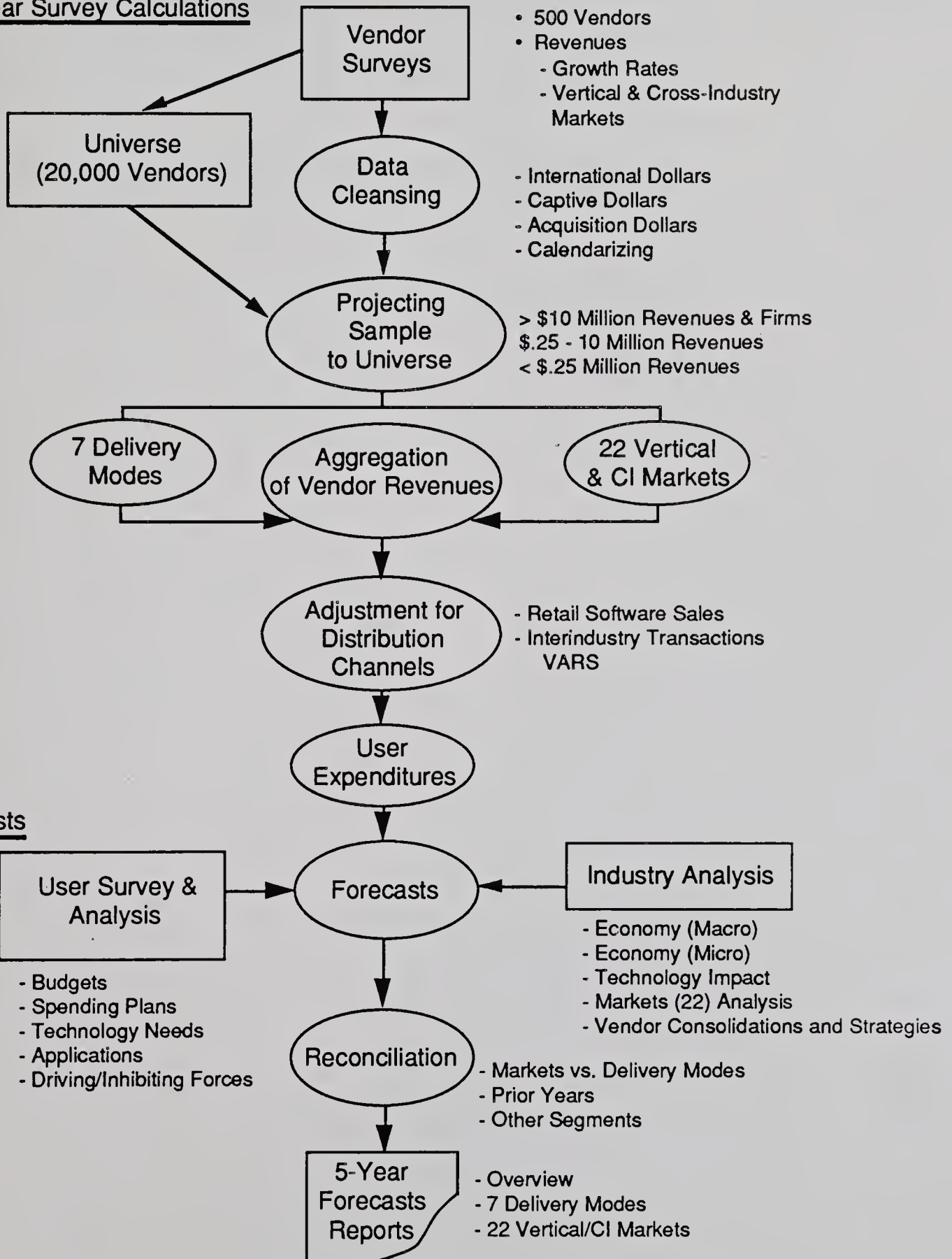
Of the 500 vendors interviewed, annual revenues of the smaller 250 companies ranged from \$250,000 to \$22 million. Collectively, revenues from all 500 firms represented 65% of the total information services industry revenues.

INPUT has also incorporated information services requirements and planning information from INPUT's recent study of over 30 chief information officers of major corporations, *Information Systems in the Year 2000*.

European data is based on a similar series of over 1,000 interviews with major vendors and computer users across Western Europe.

EXHIBIT I-2

INPUT Research Methodology

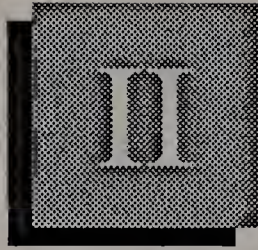
I. Base-Year Survey Calculations

D**Sources of Detailed
Market Information**

For a complete review of the information services market, readers are encouraged to review companion INPUT reports. To gain a bottom-up view of professional services within the information services market, refer to the three-ring binders, provided as part of the Market Analysis Program (MAP), that segment the IS market into 15 industry and seven cross-industry sectors.

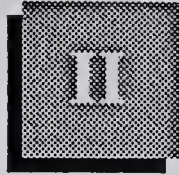
For systems integration and systems operations issues, readers should consult INPUT's Systems Integration Program and Systems Operations Program reports.

INPUT welcomes readers' comments, thoughts, and suggestions regarding this report.



Executive Overview





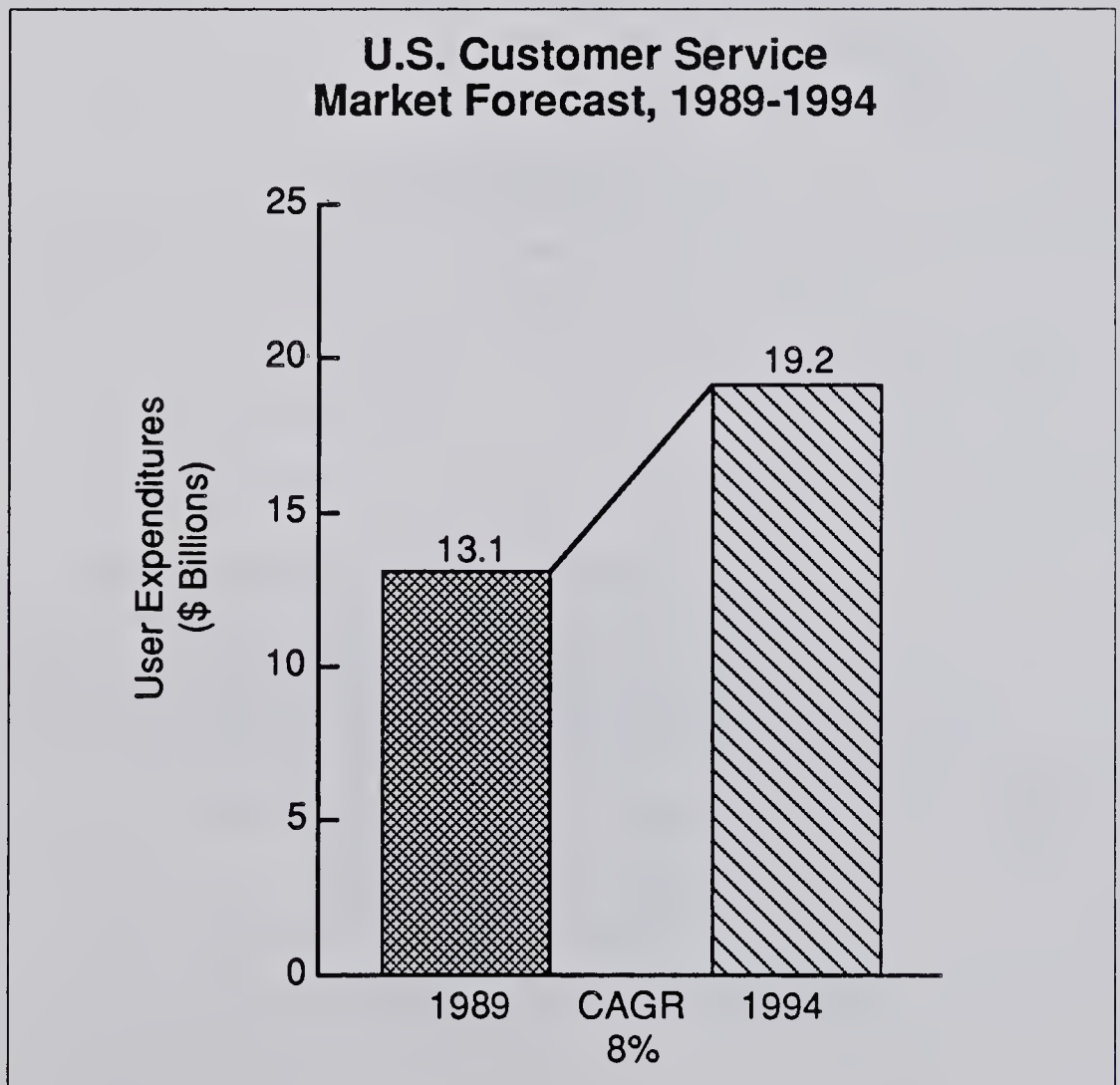
Executive Overview

A

Reasons for Assessing the Professional Services Market

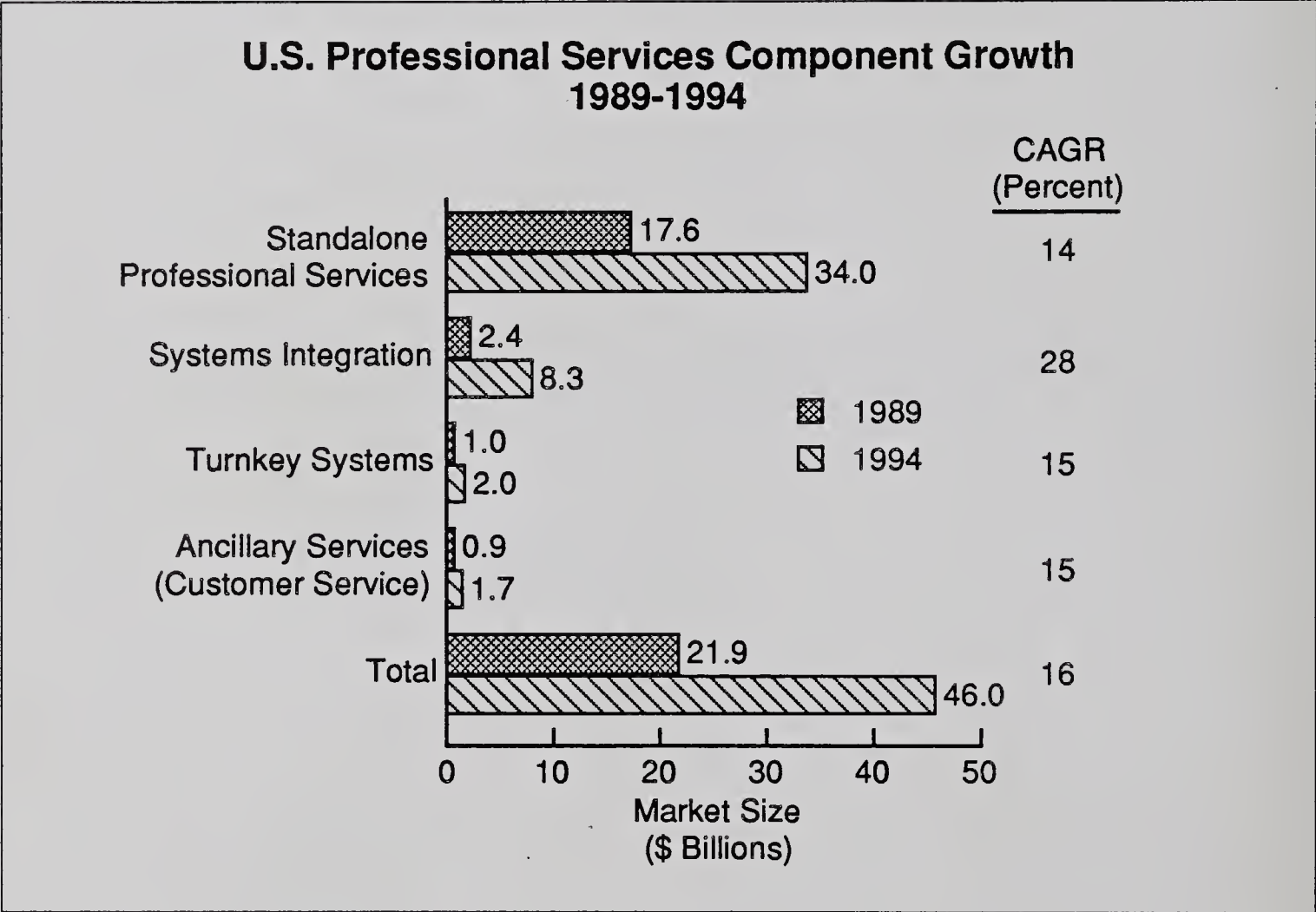
One of the principal reasons for assessing the professional services market is defensive: The traditional customer services market is expecting a period of slow growth, as shown in Exhibit II-1.

EXHIBIT II-1



In contrast, the various areas of professional services (including ancillary services within customer services) are anticipating considerably higher growth rates, as shown in Exhibit II-2.

EXHIBIT II-2

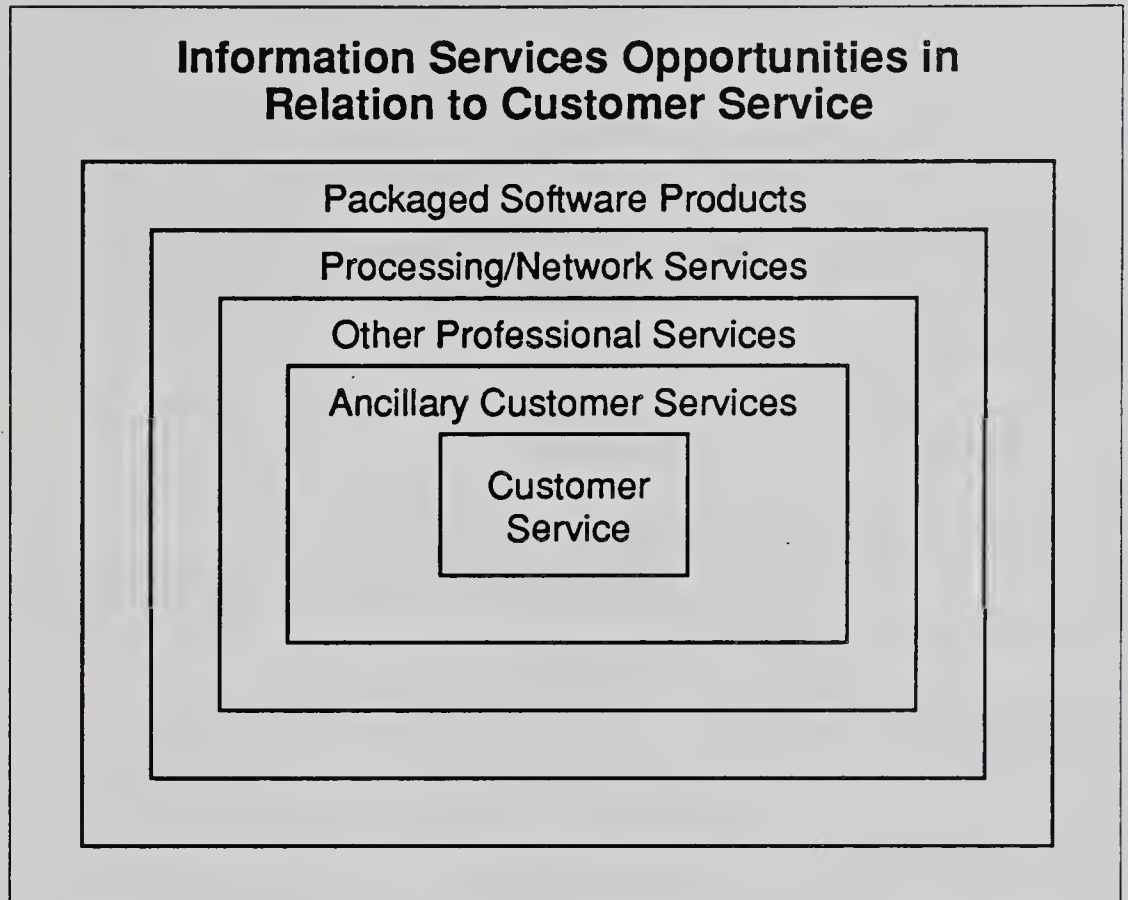


There are other types of information services opportunities—for example, processing and network services, and packaged software products. However, for many customer service organizations, professional services, relatively broadly defined, will be the best medium-term fit with a customer service organization. This “fit” includes areas such as:

- Skills and competencies
- Current market penetration
- Image in the marketplace
- Organizational culture

Exhibit II-3 illustrates the fit between customer service and information services.

EXHIBIT II-3



In addition, supplying professional services can often fulfill more general objectives of customer services organization by

- Increasing hardware sales by bundling services and products (systems integration)
- Improving margins
- Filling customer needs more completely

B

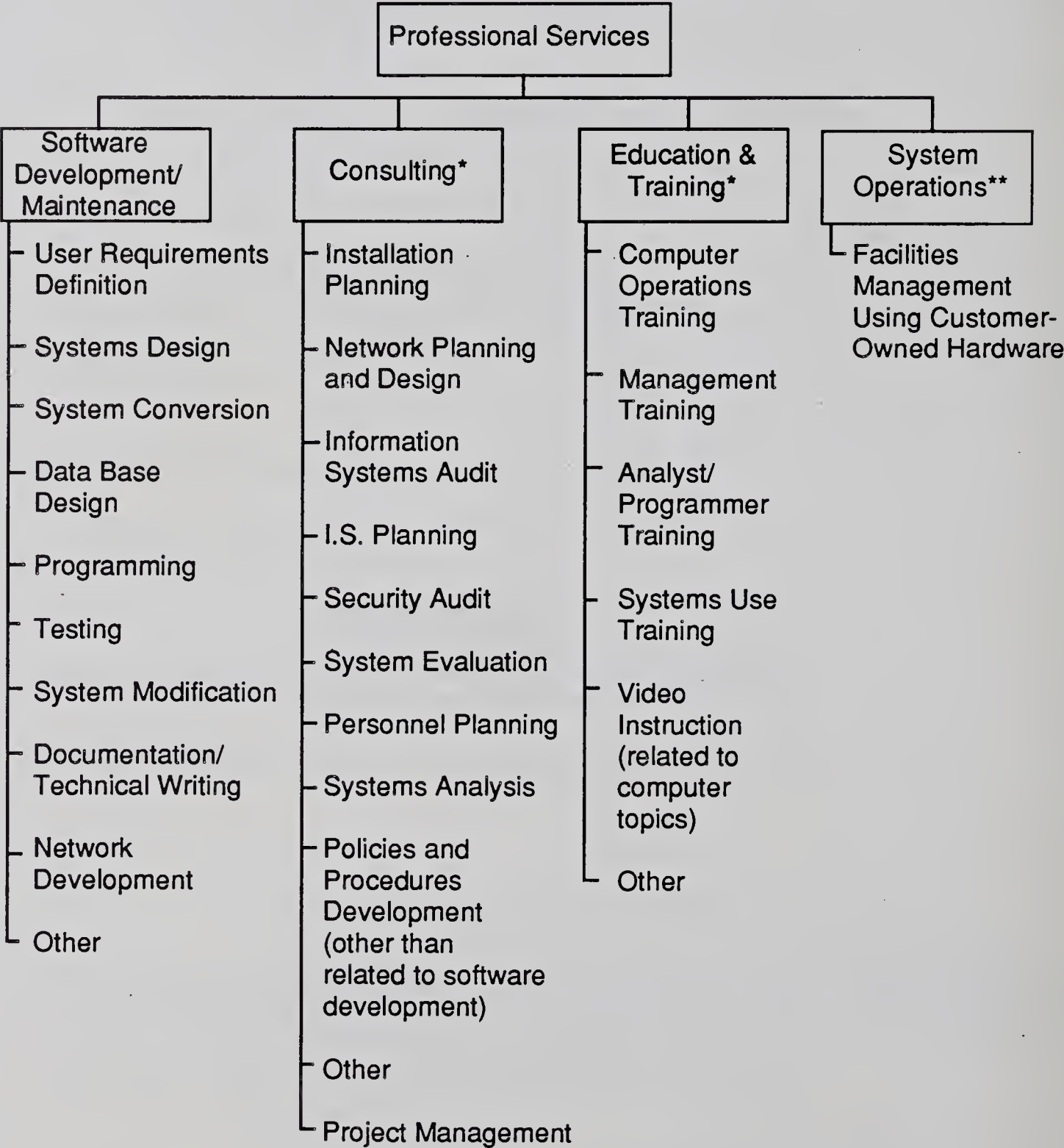
Professional Services Components

The term professional services covers a wide range of activities, illustrated in Exhibit II-4. These functional components can be offered individually (as standalone professional services) or delivered as part of a solution to a specific business problem. These solution combinations include:

- Systems integration
- Turnkey systems (the customized software component)
- Systems operations

EXHIBIT II-4

Professional Services Functions



*Related to computer systems, topics, or issues

**Formerly identified as "Professional Services Facilities Management"

Admittedly, there are grey areas among some of these delivery methods. These differences should be understood so that a business does not spend valuable resources in a less attractive market.

The differences between standalone professional services and systems integration are easier to define in the abstract than in some real-life situations. Exhibit II-5 illustrates these differences across six categories. Many projects will not be pure systems integration projects, but rather will exhibit a mixture of characteristics. However there will usually be a preponderance of characteristics that will identify an opportunity as either systems integration or professional services.

EXHIBIT II-5

Differences between Standalone Professional Services and Systems Integration

Category	Standalone Professional Services	Systems Integration
Project Duration	Can be continuous	Limited
Project Management Responsibility	Usually customer	Prime contractor
Computer Equipment Selection	Customer	Prime contractor for customer
Services Provided	Often a single service (e.g., software development)	Usually multiservice, including hardware/software integration
Pricing	Time and materials	Fixed-price
Item Purchased	Resources	"A solution"

C

Opportunities for Customer Service Organizations

Exhibit II-6 summarizes INPUT’s assessments of the opportunities available to customer services organizations. The best opportunities are now in

- Providing support to existing application systems
- Providing systems operations services

Both of these areas are attractive because

- They are both *support* services
- Industry knowledge and technical skills are important, but not critical
- Management skills make the difference
- The competitive environment is still open to new entrants

EXHIBIT II-6

Professional Services Opportunities for Customer Service Organizations: Summary

Professional Services Segment	Opportunity	Comment
Consulting	Fair/good	Depends on specific skills available
Applications Development (New Systems)	Limited	Highly competitive
Applications Support (Existing Systems)	Good	Need project management and some technical skills
Systems Integration	Limited	Enter at later phase
Turnkey	None	Tied too closely to software product offerings
Systems Operations	Good	Competitive situation still fluid

Professional services is attractive also because historically, it has been much more resistant to changes in the economy than product sales. However, within professional services there are areas that are more resistant than others to economic changes (see Exhibit II-7).

EXHIBIT II-7

Impact of Recession on Selected Professional Services

Professional Service Type	Impact on Volume of Work by Recession Type	
	Mild	Severe
Consulting	*	--
New Development		
• Standalone Professional Services	+	*
• Systems Integration	-	--
Applications Support	+	+
Systems Operations	++	+

Key:

- ++ Very Positive
- + Positive
- * Neutral
- Negative
- Very Negative

- Applications support *must* be performed; it is often less costly and more flexible to have this support contracted out.
- Systems operations has already proven to be very financially attractive to customers. This attraction can only increase if the general economy becomes weaker.

D

Entry Strategies

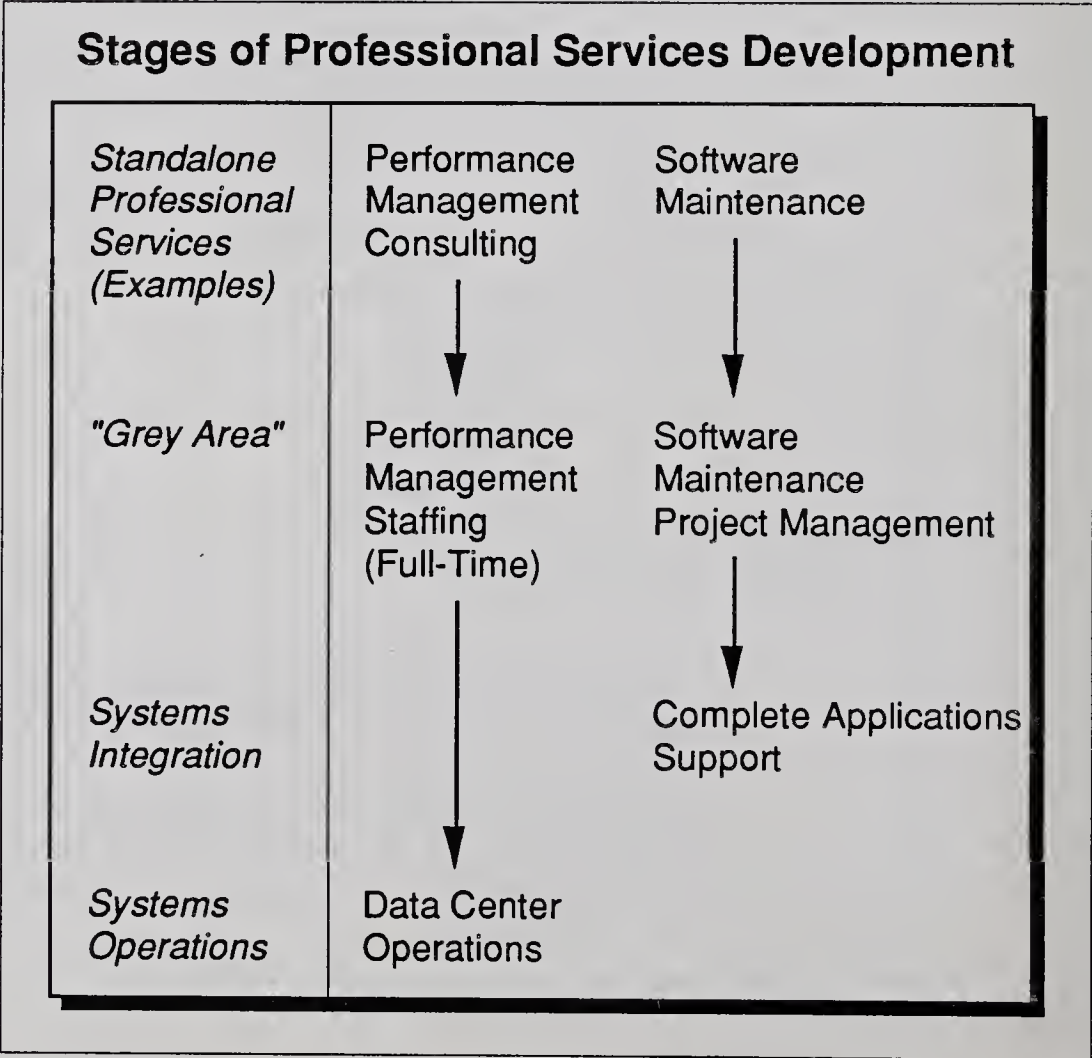
Standalone professional services usually offer less risk than systems integration (margins tend to be lower as a result). One strategy is to exploit the “grey area” between these two types of offerings:

- Enter the market, basically, as time and materials providers.
- As more experience is built up, offer more complete services with a higher fixed-price component.

Exhibit II-8 illustrates how this process could take place in both the applications support and data center operations areas. This kind of progression would usually not be as simple as is shown here:

- A few complete services may be supplied relatively early in the course of the business; this would aid in planning and would help avoid costly mistakes.
- There will always be customers who prefer standalone professional services; customer desires should be paramount (as long as margins are maintained).

EXHIBIT II-8



Looking at market-based opportunities, there are some types of prospects that will be better opportunities than others. Generally, they are companies in transition; the best combination is a company going through business changes, while its underlying operations are fairly stable (Exhibit II-9).

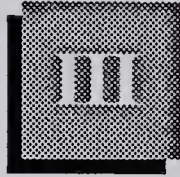
EXHIBIT II-9**Opportunity Examples**

- Recently acquired divisions
- Operations being prepared for divestitures
- Companies under financial pressure
- Inefficient operations
- Technical laggards
- IS management turnover
- Relatively stable applications



Scoping the Opportunity





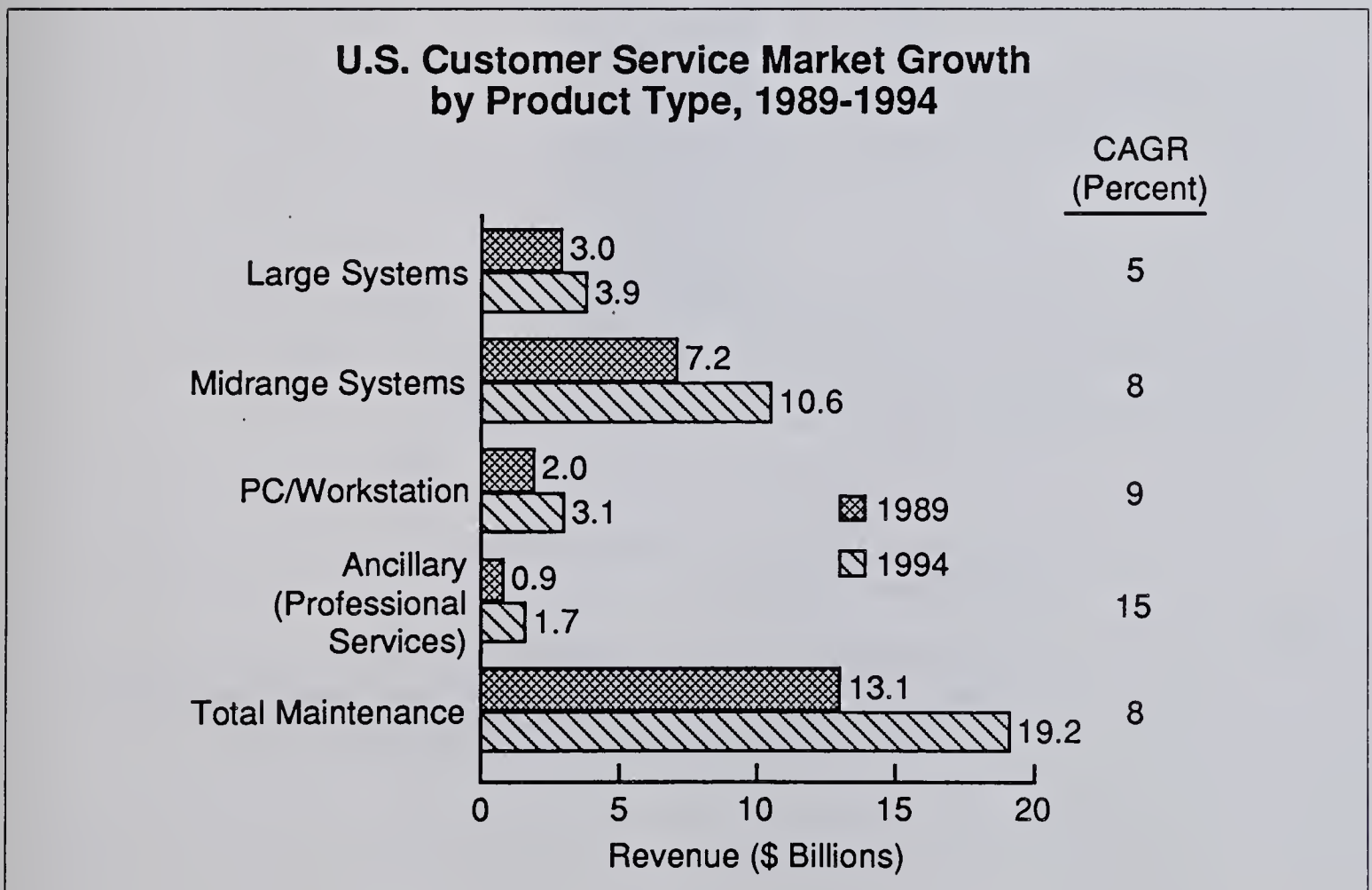
Scoping the Opportunity

A

Why Professional Services?

This chapter sets the stage for chapters IV, V and VI, which examine individual professional services areas. The major issue and driving force in examining new services and markets is that the traditional U.S. customer service market is expected to grow slowly between now and 1994, as shown in Exhibit III-1 below.

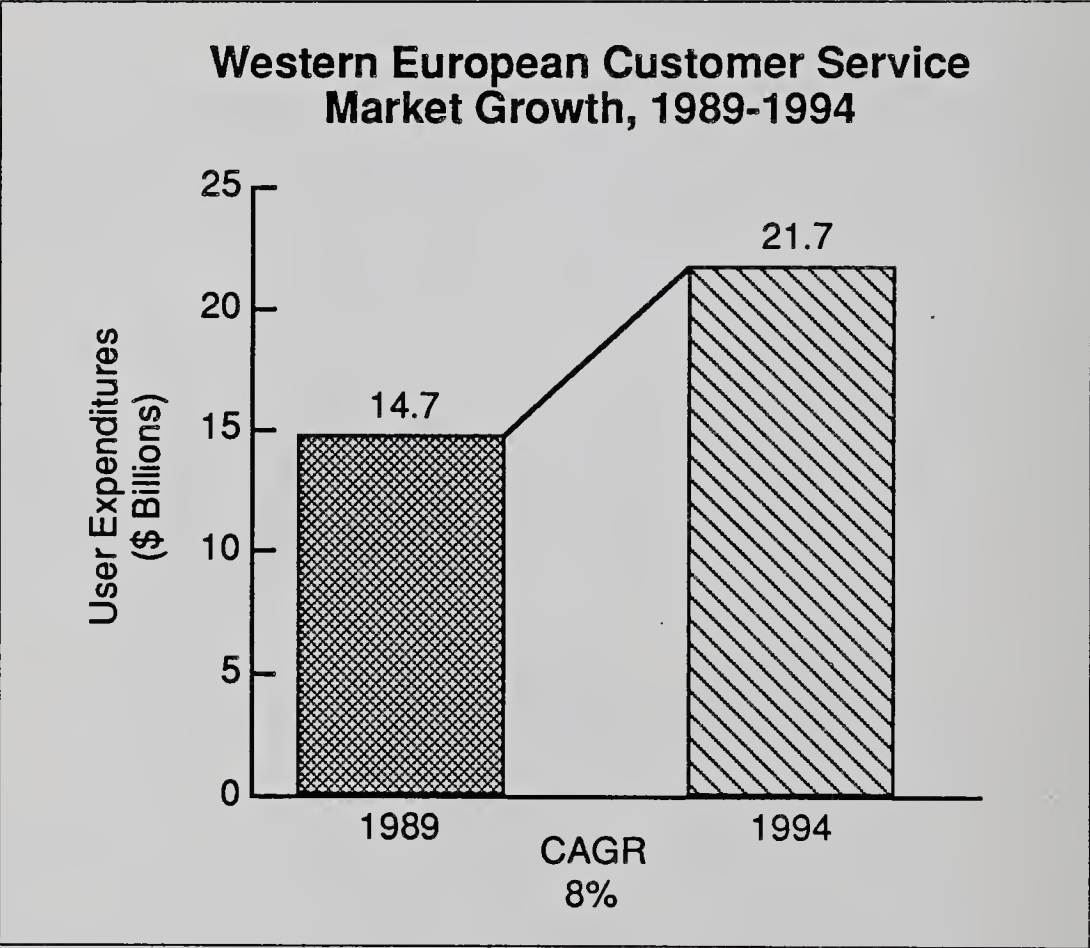
EXHIBIT III-1



- The traditional maintenance business will grow around 7% per year, which in real terms is very low, given an expected inflation rate of 4 to 5%.
- Some sectors, such as the large systems market, will only barely keep ahead of inflation.
- Ancillary service growth (i.e., customer service-related professional services) is good at 15%. However, even by 1994, these services will only be one-tenth the size of traditional hardware maintenance services.

The European situation is not strikingly different (see Exhibit III-2).

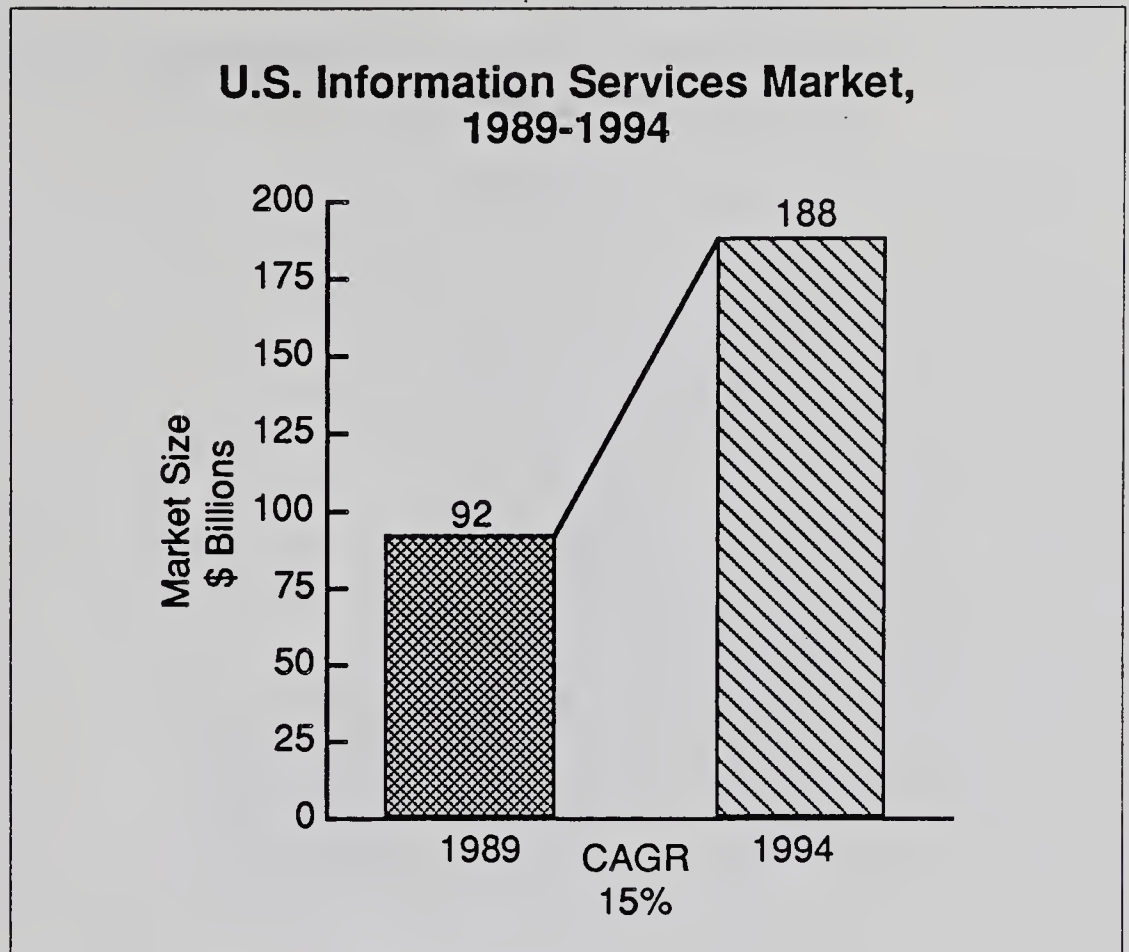
EXHIBIT III-2



The situation should be contrasted to the information services markets in the U.S. and Europe.

- The average annual increase across all information services sectors is forecast to be 15%. Certain sectors are growing considerably faster. This report will focus on some of them (see Exhibit III-3).

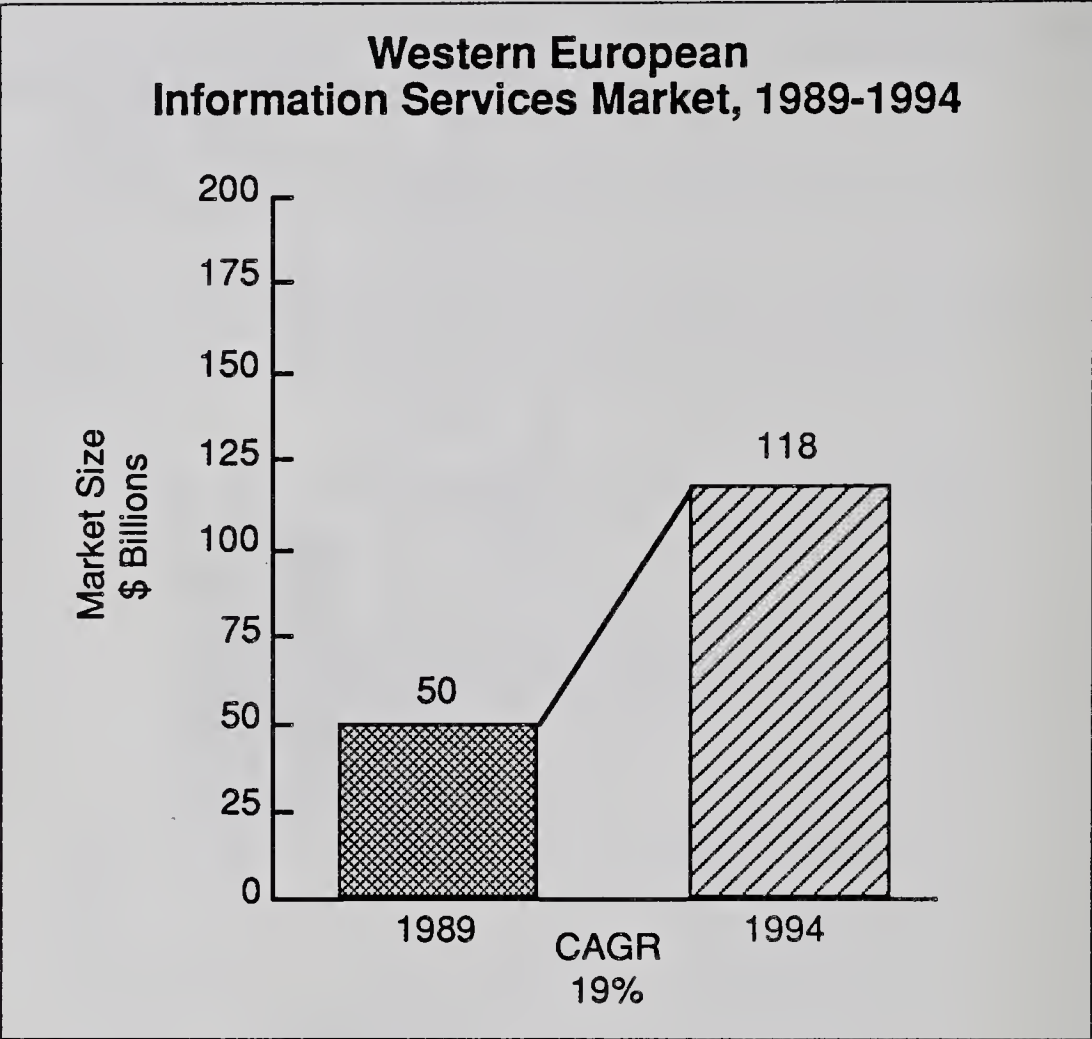
EXHIBIT III-3



- In Europe the situation is quite similar, but there is even higher growth forecast in the European market than in the U.S. (see Exhibit III-4). European market opportunities are more complex, since there are often differences among country markets. Geography is rarely as important in the U.S.

As discussed in Chapter I, many customer service organizations have been considering expansion of traditional services into broader services. The issue facing customer service executives is deciding which direction they should take because information services covers many different types of services. Priorities must be established in order to minimize risks.

EXHIBIT III-4

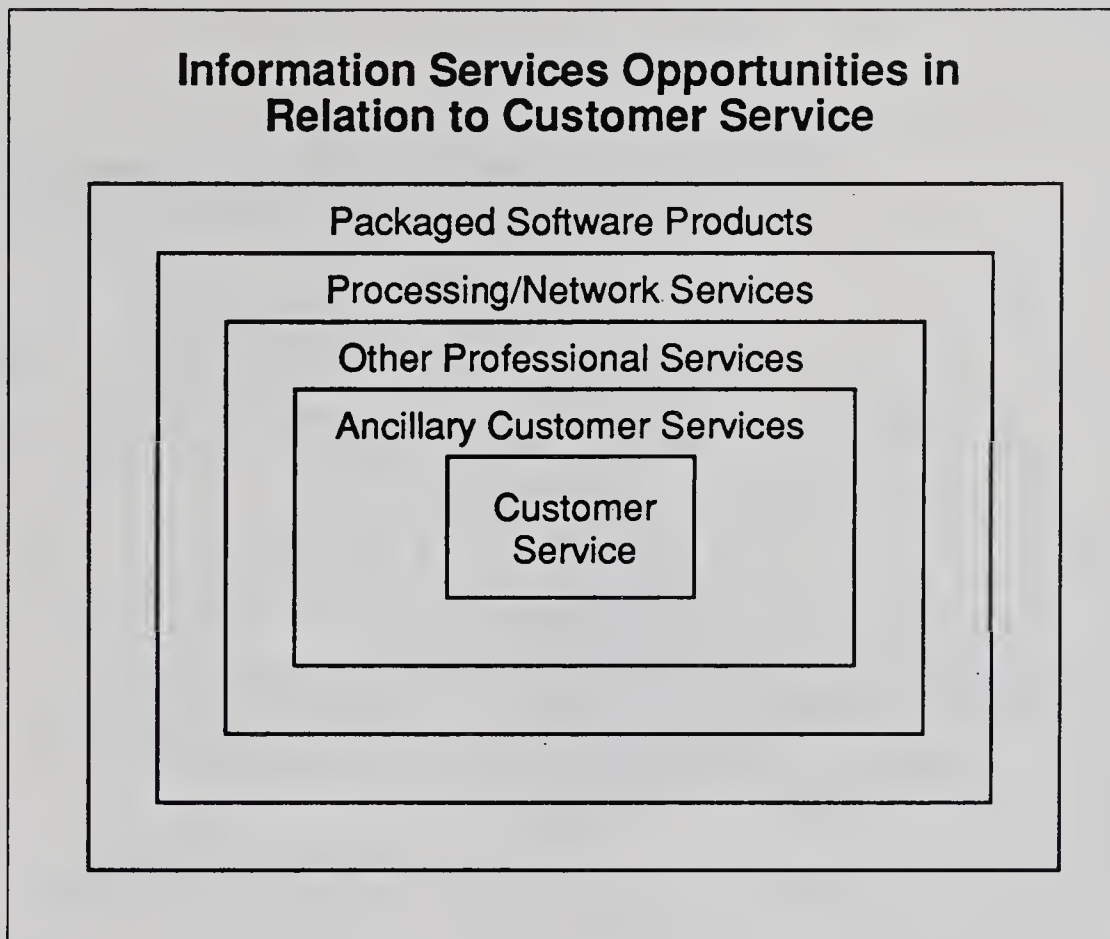


One way of choosing opportunities is to assess how closely related they are to an organization's core business. Many customer service organizations (although not all) will find that their potential opportunities correspond with the general categories shown in Exhibit III-5—for example, professional services in general will usually present more opportunities than, say, software products. The attractiveness of individual opportunities will depend on a combination of items, including:

- Market size
- Market growth
- Market knowledge (by vendor)
- Functional capabilities (current or future)
- Fit with current business
- Market receptivity to a particular service offered by a particular vendor
- Resources required

The remainder of this report will present information and analysis bearing on the professional services sector to assist customer service organizations in making strategic decisions.

EXHIBIT III-5

**B****Professional Services
Overview**

The entire U.S. information services/customer services market was over \$105 billion in 1989, with professional services accounting for one-fifth of that. The vast majority of professional services are outside of customer services (see Exhibit III-6).

For the purposes of this report, INPUT has divided professional services into four categories:

- Customer service ancillary services—maintenance training, pre-installation planning, installation/deinstallation, network design and planning, and related consulting services
- Standalone professional service functions. These functions are the universal building blocks of professional services:
 - Consulting
 - Systems development
 - Education/training
 - Systems operations

EXHIBIT III-6

Professional Services Components of Information Services/Customer Services

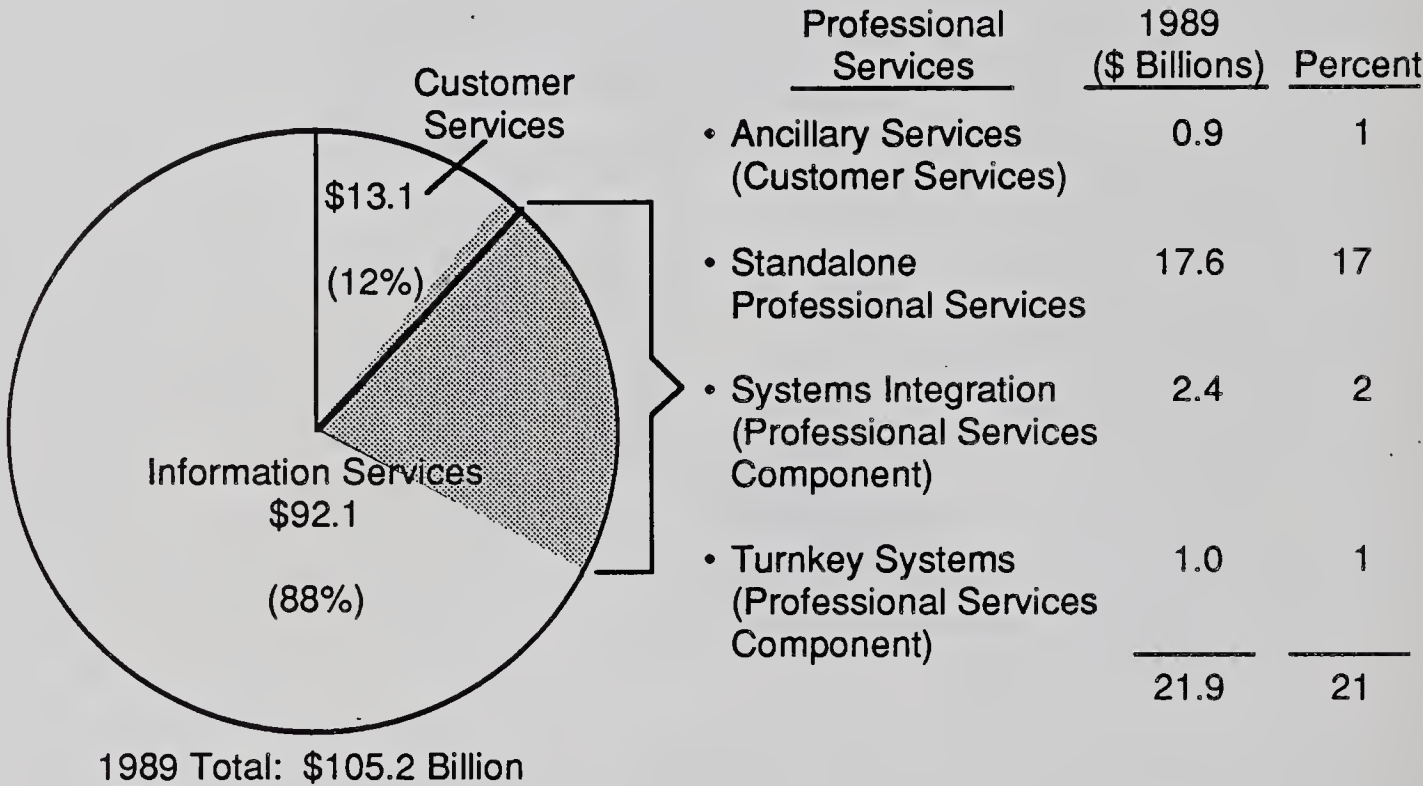
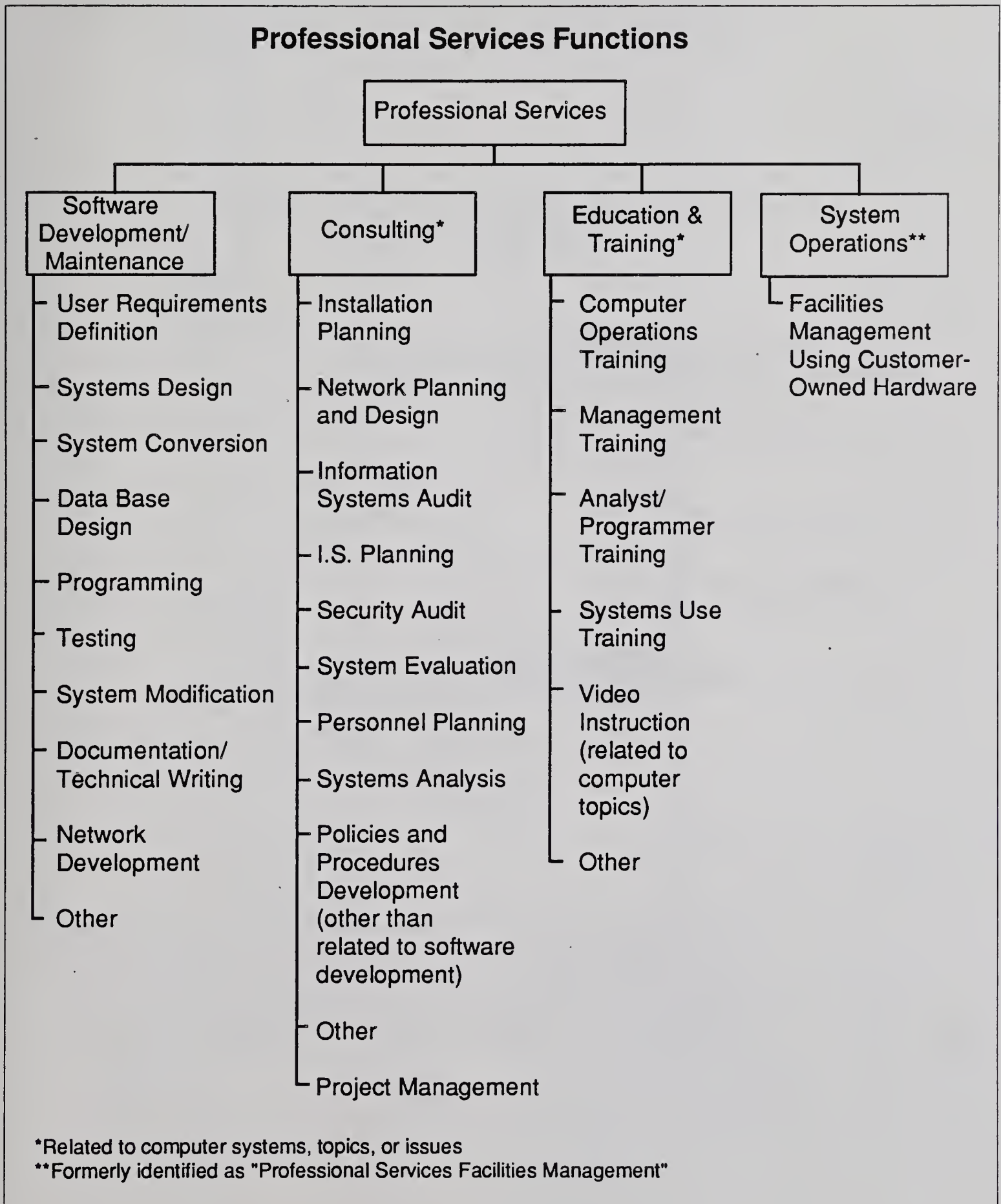


Exhibit III-7 summarizes the services that are included in each function. (More detailed definitions are included in Chapter I.) Standalone professional services, except for systems operations, are analyzed in Chapter IV; systems operations are sufficiently different in nature to be analyzed separately in Chapter VI.

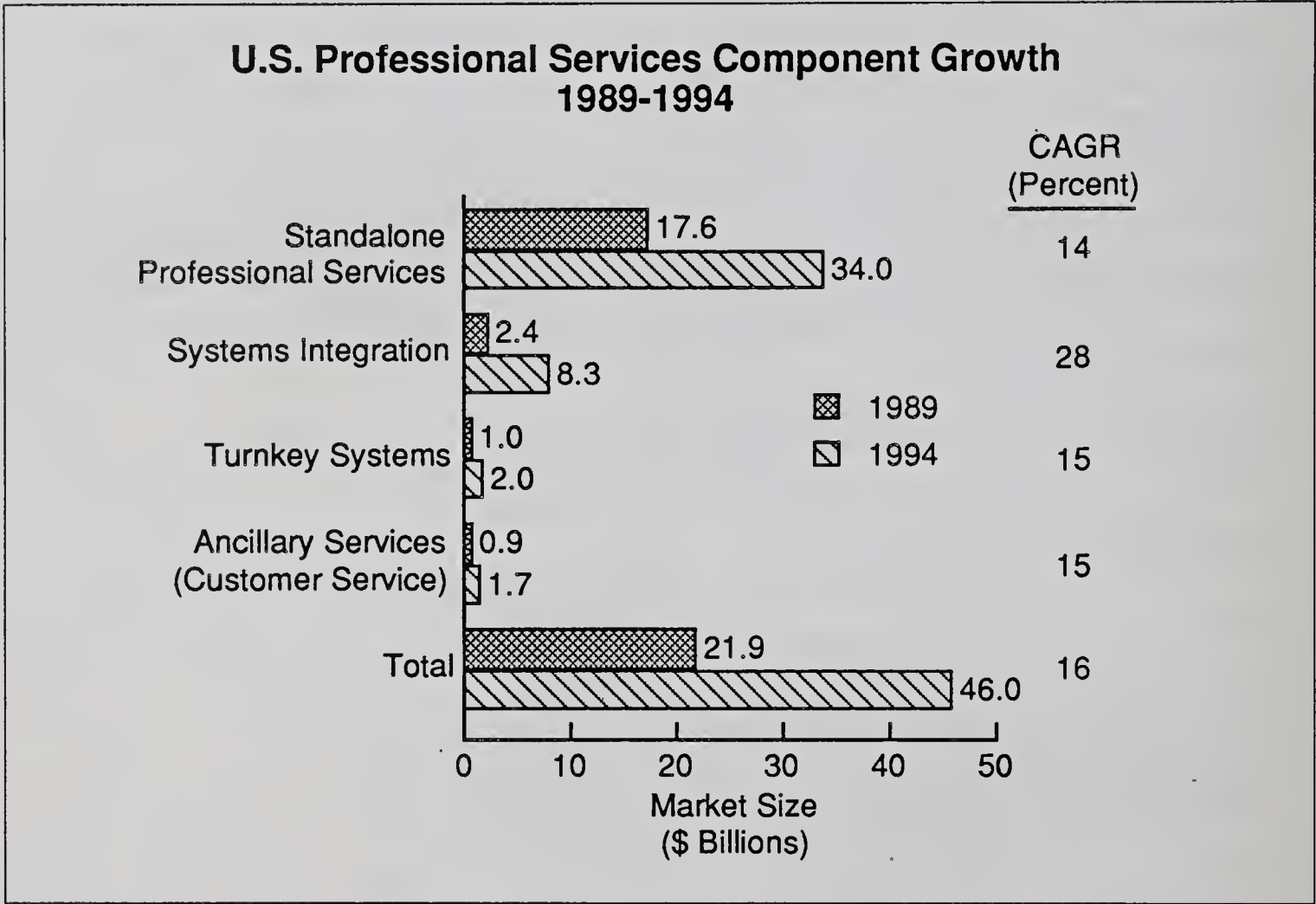
- The professional services component of systems integration activities (which also includes hardware and software products)
- The professional services component of turnkey systems (i.e., software customization)

EXHIBIT III-7



The various components are all expected to grow at favorable rates through 1991, with the professional services component of systems integration growing at almost twice the rate of the others (see Exhibit III-8). Systems integration-related and turnkey-related professional services opportunities are analyzed in Chapter V, Integrated Services.

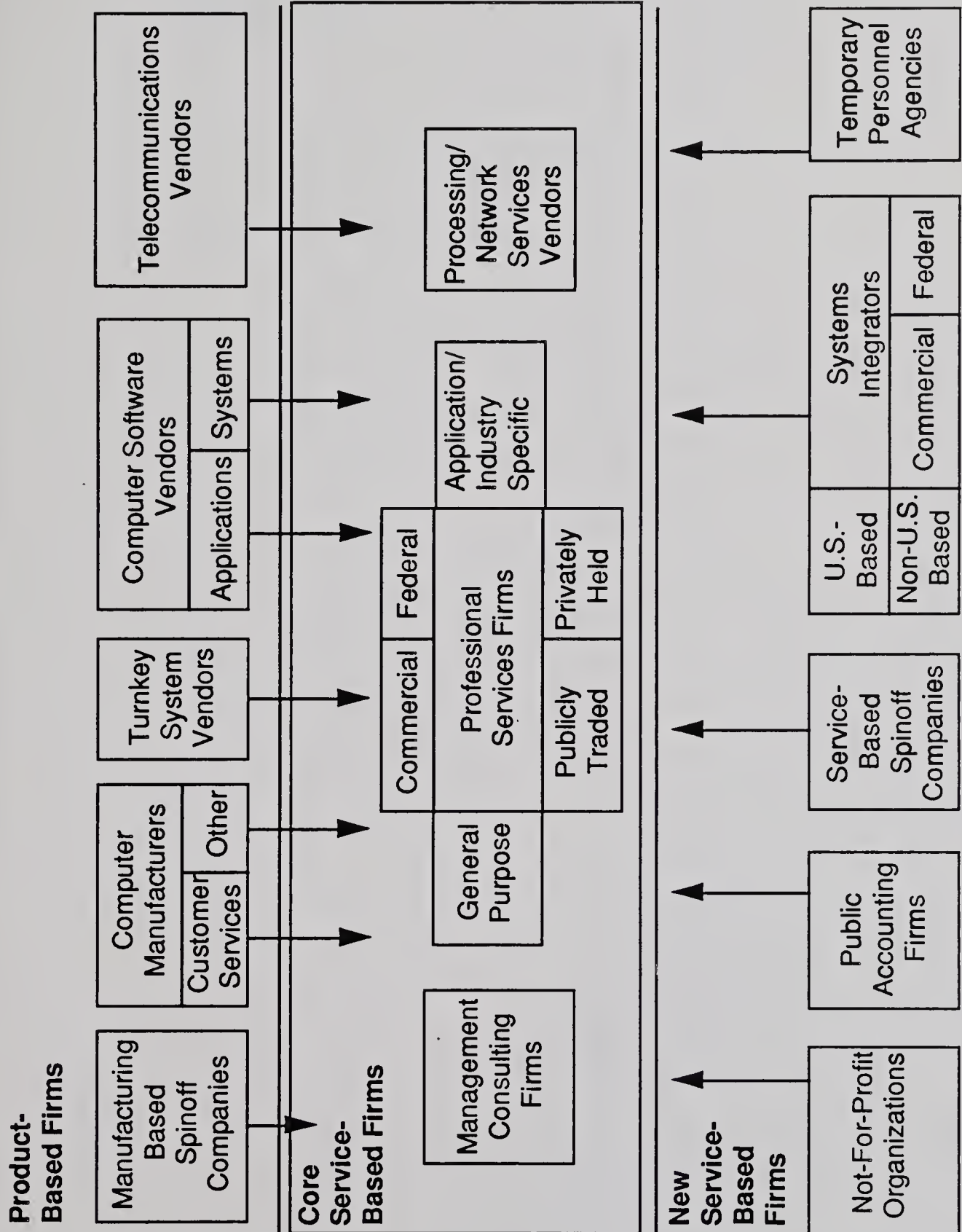
EXHIBIT III-8



One reason for customer service organizations having to be disciplined in entering this market is that there is a great deal of competition, actual and potential. The professional services sector is one of the easiest sectors for small start-ups to enter, but one of the most difficult for achieving steady growth and profitability. Exhibit III-9 illustrates the wide range of competitors.

EXHIBIT III-9

Professional Services Market Structure Based on Category of Services Provider





Standalone Professional Services



IV

Standalone Professional Services

A

Overview

The market for standalone professional services is forecast to grow 14% annually through 1994 (see Exhibit IV-1). Within this overall category, consulting functions are expected to grow at 18% annually (see Exhibit IV-2).

EXHIBIT IV-1

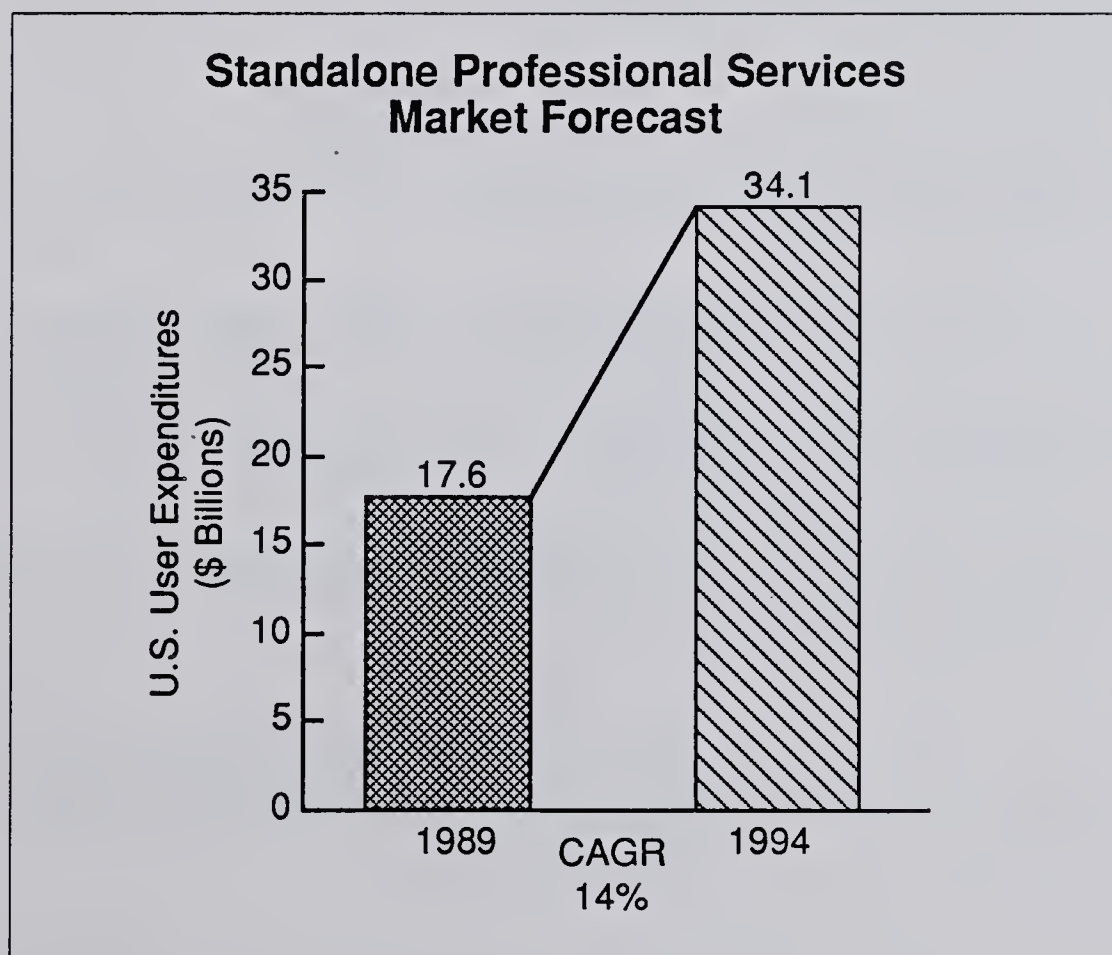
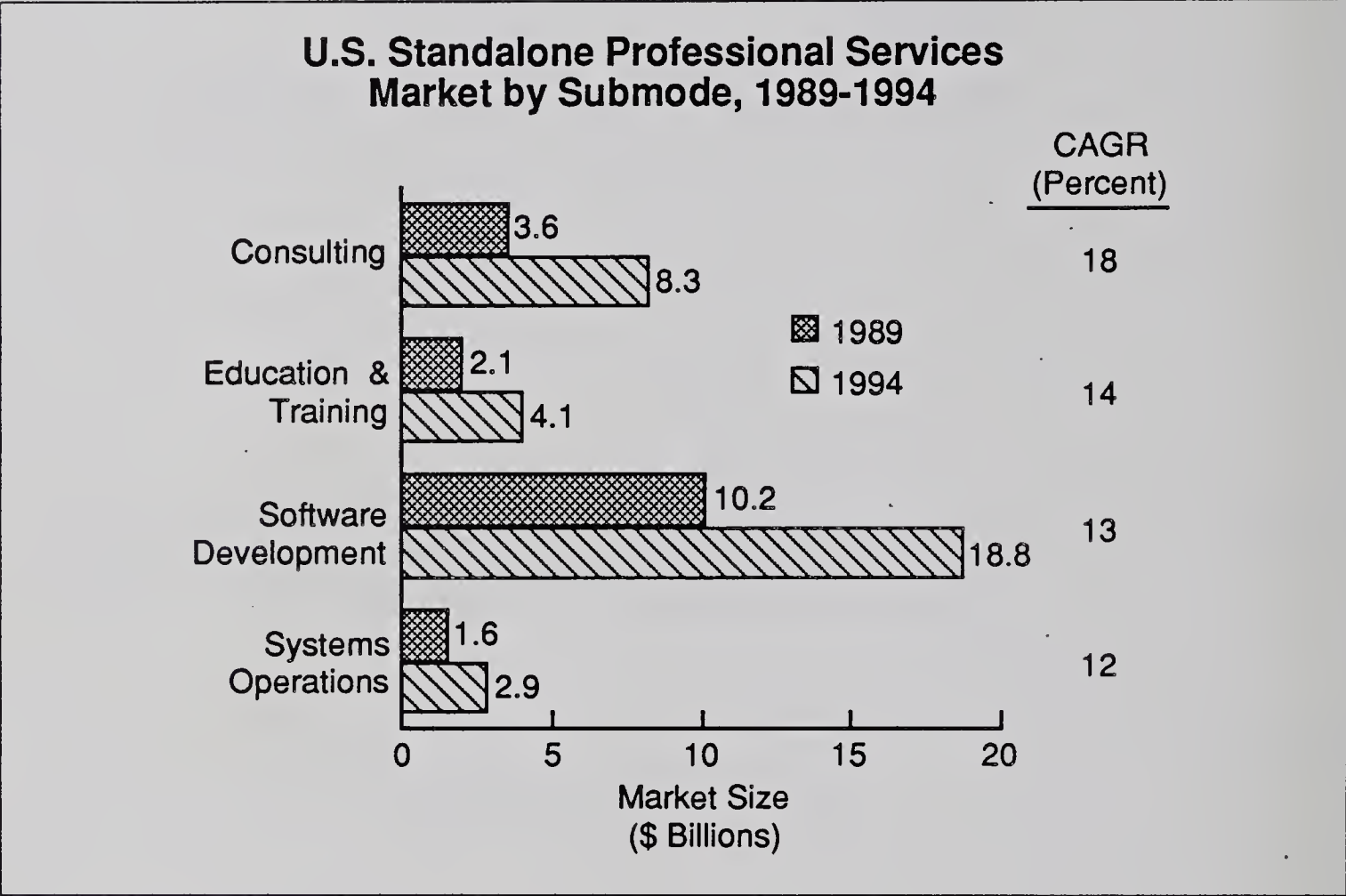


EXHIBIT IV-2

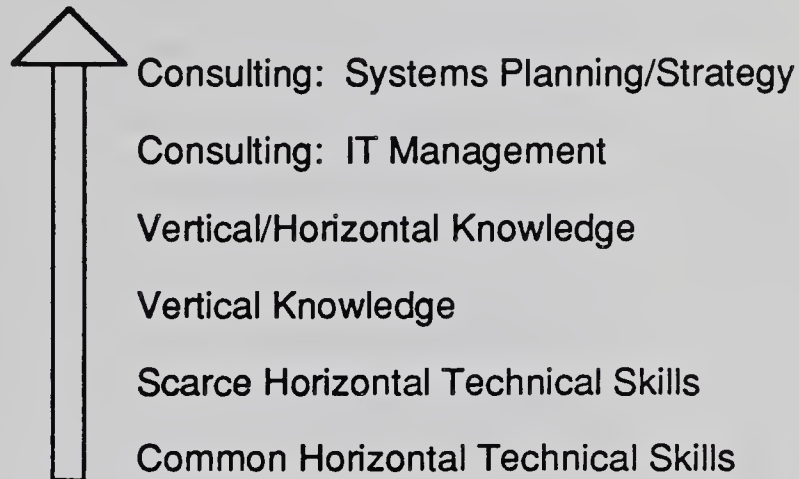


The reason for this variation in growth is that consulting services offer scarce, important skills that are often missing in a client organization. Systems development or systems operations skills, on the other hand, are much more interchangeable with in-house (or easily hireable) skills. Exhibit IV-3 shows the hierarchy of skills.

- The common technical skills are often bought on the basis of price, or mark-up from the vendor’s cost—this puts ongoing pressure on margins.
- Supplying scarce technical skills is no business panacea for the vendor: Although supplying these skills results in a higher margin, they are often as difficult for suppliers to find and retain as for customers. As scarce skills become more common, they also generally become commodities.

To the extent that a professional services vendor moves up the value chain and provides a vertically oriented service, it becomes much more important to focus on specific applications or industries:

EXHIBIT IV-3

Professional Services Skills Hierarchy

- Exhibit IV-4 shows that manufacturing and administrative applications account for over half the work undertaken.
- Exhibit IV-5 shows the share represented by the major vertical industry groups.

B**Consulting Services**

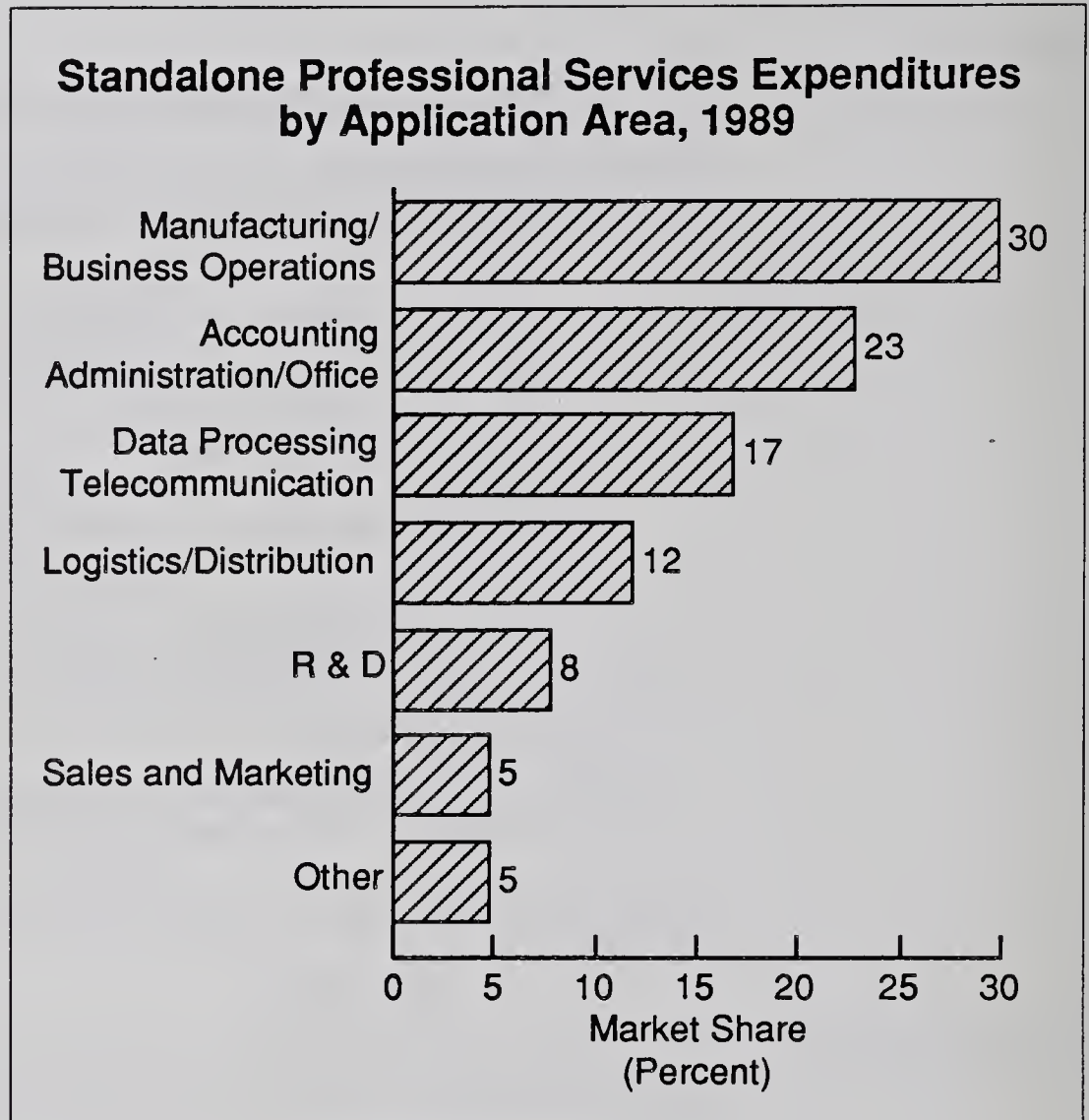
At a glance, it appears that customer services organizations would not be the best candidates for providing either of the principal types of consulting:

- Systems planning/strategy (systems strategy; IS-related business strategy)
- IS management (systems implementation planning, network planning, audit/evaluation, and technology impact assessment)

However, three-quarters of this market is in consulting to IS management on focused issues. Many customer services organizations have strong skills in such areas as:

- Technology assessment and forecasting
- Site planning and construction
- Performance measurement, planning, and improvement

EXHIBIT IV-4



The challenge for customer services organizations is twofold:

- Selling such services in a cost-effective manner
- Fostering an image of objectivity where third-party products are involved

EXHIBIT IV-5

Standalone Professional Services User Expenditures by Industry, 1989-1994

Industry Sector	User Expenditures (\$ Millions)		1989-1994 CAGR (Percent)
	1989	1994	
Discrete Manufacturing	3,775	7,790	16
Process Manufacturing	1,820	3,985	17
Transportation	195	355	13
Utilities	450	830	13
Telecommunications	810	1,700	16
Wholesale Distribution	325	600	13
Retail Distribution	215	435	15
Banking and Finance	2,275	5,200	18
Insurance	1,380	2,655	14
Medical	345	555	10
Education	70	140	15
Services	135	240	12
Federal Government	3,260	4,790	8
State and Local Government	2,185	4,205	14
Other Industry-Specific	320	565	12
Total	17,560	34,050	14

Note: numbers rounded to nearest \$5 million.

C

Applications Development/Maintenance

At least three-quarters of the personnel expense (both in-house and vendor expense) of customer software is for post-installation applications support, which includes maintenance and training (see Exhibit IV-6). Only in the last two years have any firms begun to target this as a value-added service. Even now, the needs of this market are usually addressed by low margin contract programming firms and “body shops.”

EXHIBIT IV-6

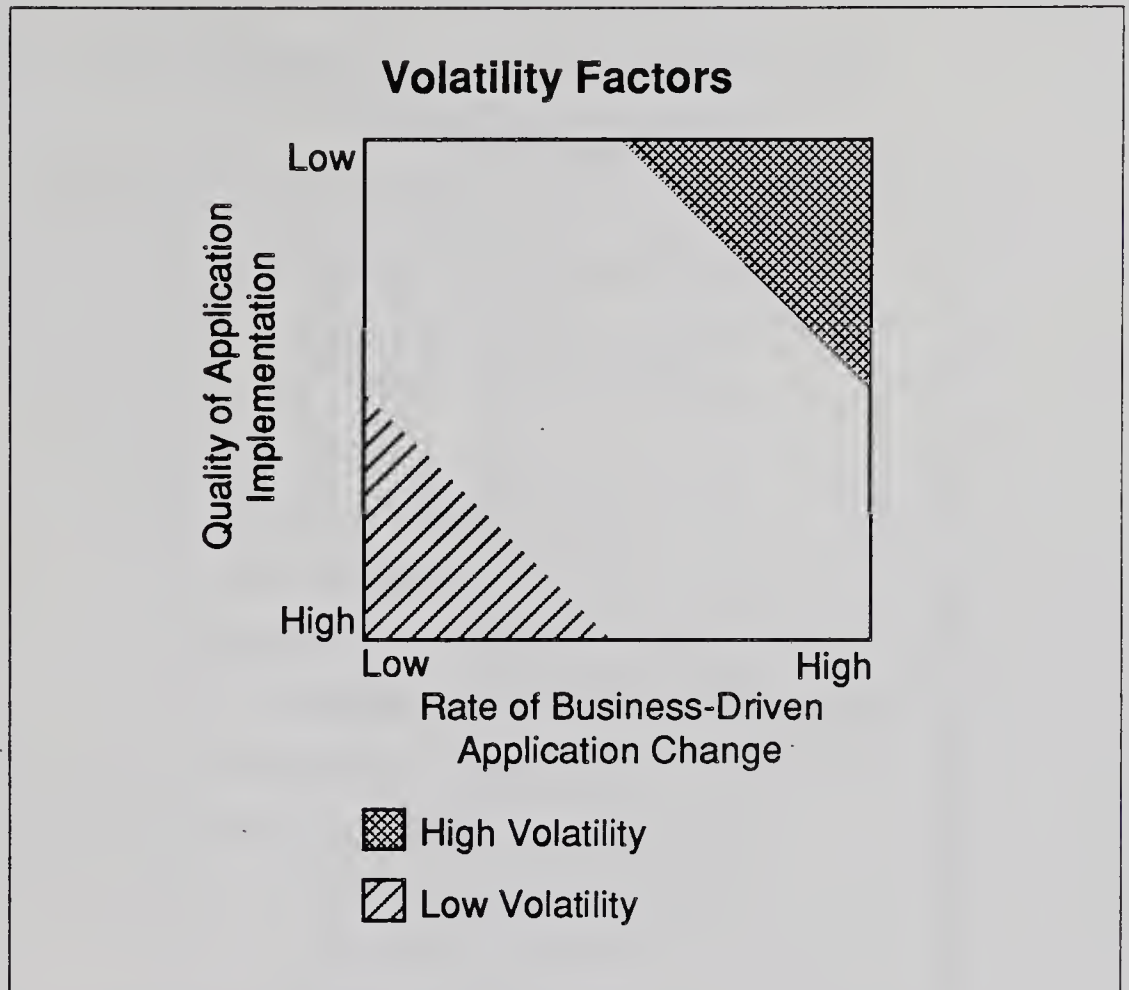
Applications Support Constituents

- Software Maintenance
 - Defect correction
 - Course-of-business modifications
 - Significant upgrades (function/performance)
 - Replacement (partial/full)
- Training
- Application Support Centers
 - Documentation/Updates
 - Phone-in support
 - Live training
 - Problem data bases
 - Modification request clearinghouse

Many of the most important business opportunities will lie in servicing highly volatile applications (see Exhibit IV-7), where volatility is driven by two factors:

- Relatively low quality in the underlying application system
- Relatively high value to the business, as indicated by high rates of change

EXHIBIT IV-7



One sign of this type of application is what might be termed a “heritage” application system that is still a critical business component (see Exhibit IV-8 for distinctions among major applications sources).

Customer service organizations may be uniquely suited to undertaking applications support: While many of the specific skills required are different from those in traditional maintenance organizations, the general skills, and especially the management discipline necessary for success, are very similar.

EXHIBIT IV-8

Application Sources

- "Heritage" Applications
 - More than five years old
 - Obsolescent technology
- "Modern" Applications
 - In-house developed
 - Contractor-built
- Packages
 - Off-the-shelf
 - Modified
 - Unchanged, but integrated

Exhibit IV-9 summarizes the types of resources necessary to succeed in supplying applications support services.

EXHIBIT IV-9

**Application Support Opportunity:
Mobilizing Resources**

- Technical resources
 - Re-engineering (CASE) tools
 - Application support centers (client/application-specific)
- Skills
 - Application knowledge
 - Generalized
 - Client-specific
 - Logic/error identification (debugging)
 - Re-engineering
- Management
 - Project management
 - Cost estimating

D**Competitive
Environment**

Exhibit IV-10 shows the leading professional services firms overall (including federal government revenues and excluding systems integration revenues). Most equipment manufacturers already have separate divisions focused on the federal systems market, and many of the revenues in Exhibit IV-10 come from the federal sector. Therefore, it is more meaningful, for illustrating opportunities, to separate these revenues and show the leading commercial professional services firms.

EXHIBIT IV-10

**Leading Standalone
Professional Services Firms**

- Computer Sciences Corp.
- Unisys
- IBM
- SAIC
- Ford Aerospace
- Black and Decker
- NYNEX (AGS)
- Andersen Consulting
- Logicon
- TRW

Note: Includes federal revenues.

Exhibit IV-11 goes one step further and breaks down the leaders by professional services function:

- Even at this relatively high level, the exhibit shows how professional services is a series of niche markets. Only IBM and Andersen are common to all lists.
- Several of the leading firms are often considered not to be real information services firms (McKinsey, A.D. Little, and Booz-Allen).

EXHIBIT IV-11

**Leading Commercial
Professional Services Firms**

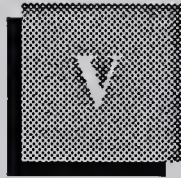
- Systems planning/strategy
 - McKinsey
 - Andersen
 - IBM
 - A.D. Little
 - Booz-Allen
- IS management
 - IBM
 - Andersen
 - CSC
 - Booz-Allen
 - EDS
 - A.D. Little
- Systems development/maintenance
 - IBM
 - Andersen
 - EDS
 - AGS/NYNEX
 - CSC
 - DEC

Note: Excludes systems integration revenues.



Integrated Services





Integrated Services

There are two general types of integrated services:

- Systems integration services
- Turnkey systems

Systems integration has a high professional services component and will be analyzed in greater depth than turnkey systems.

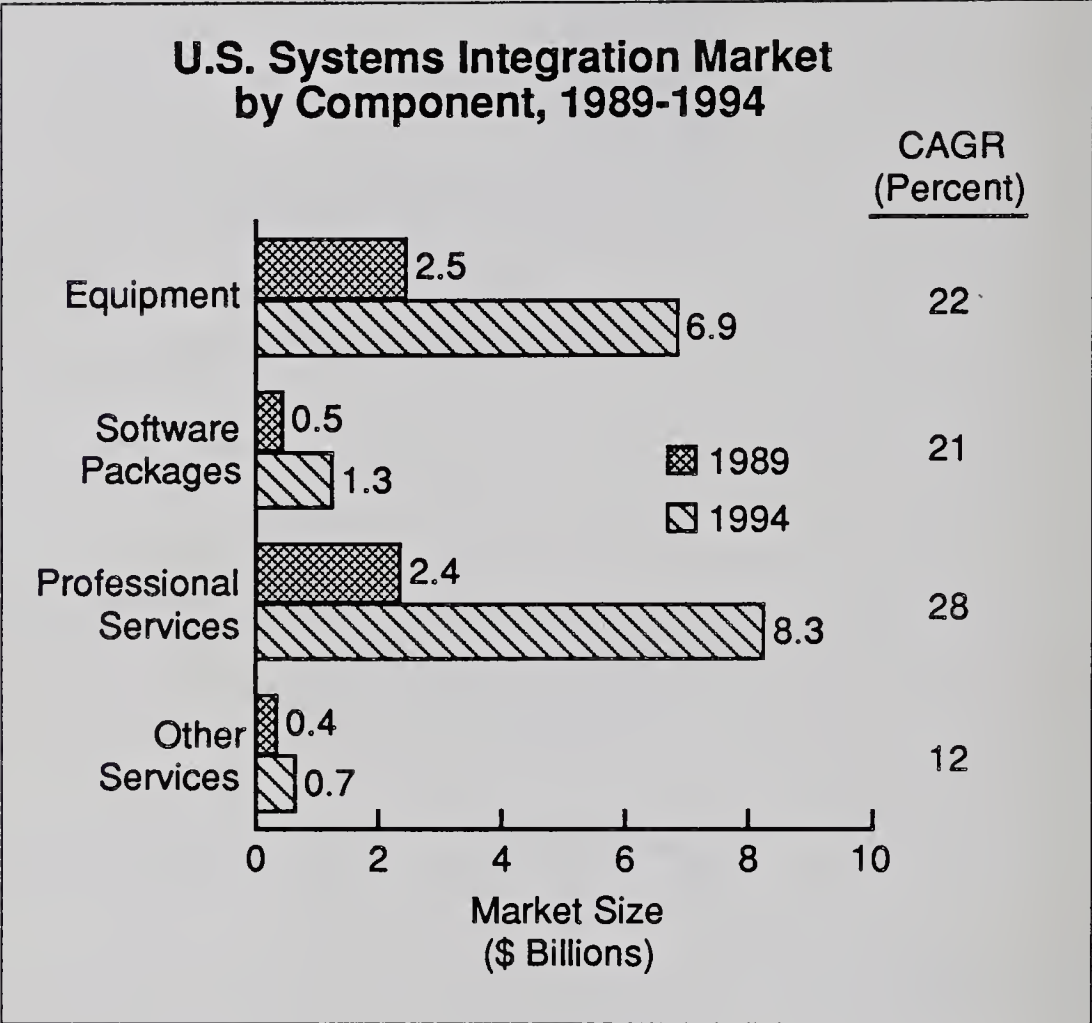
A

Systems Integration

Systems integration is the bringing together of hardware, software products, and professional services to produce a tailored solution to a particular systems problem. While the proportions of the components will vary from project to project, typically professional services account for almost half of the cost of a systems integration project. The professional services component can be viewed as the most important for the following reasons:

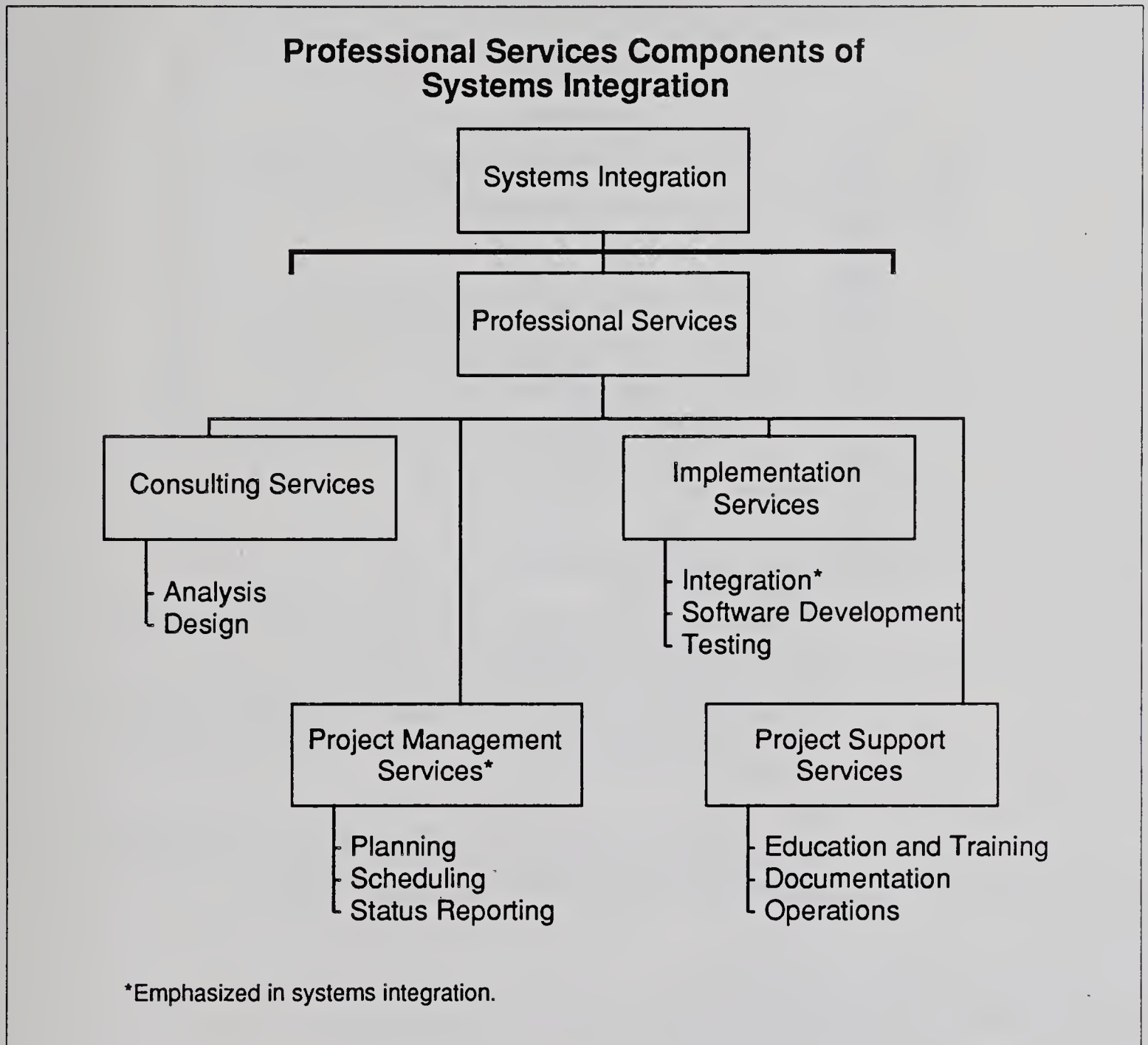
- Hardware and software are generally off-the-shelf products.
- While software products have some individuality, hardware products are becoming commodities.
- Professional services can be viewed as the glue that holds projects together.
- The professional services component is also the fastest-growing component (see Exhibit V-1).

EXHIBIT V-1



- The mix of professional services functions is very similar to those of standalone professional services; naturally, there is more emphasis placed on the services involving planning, scheduling, and integration (see Exhibit V-2).

EXHIBIT V-2



Why is there such growth in systems integration? Many IS departments find that they simply do not have the resources to undertake large, complex projects against tight schedules. The use of new technology just adds to the risks. Exhibit V-3 summarizes the factors that lead firms to consider systems integration contractors.

EXHIBIT V-3

Systems Integration Motivators

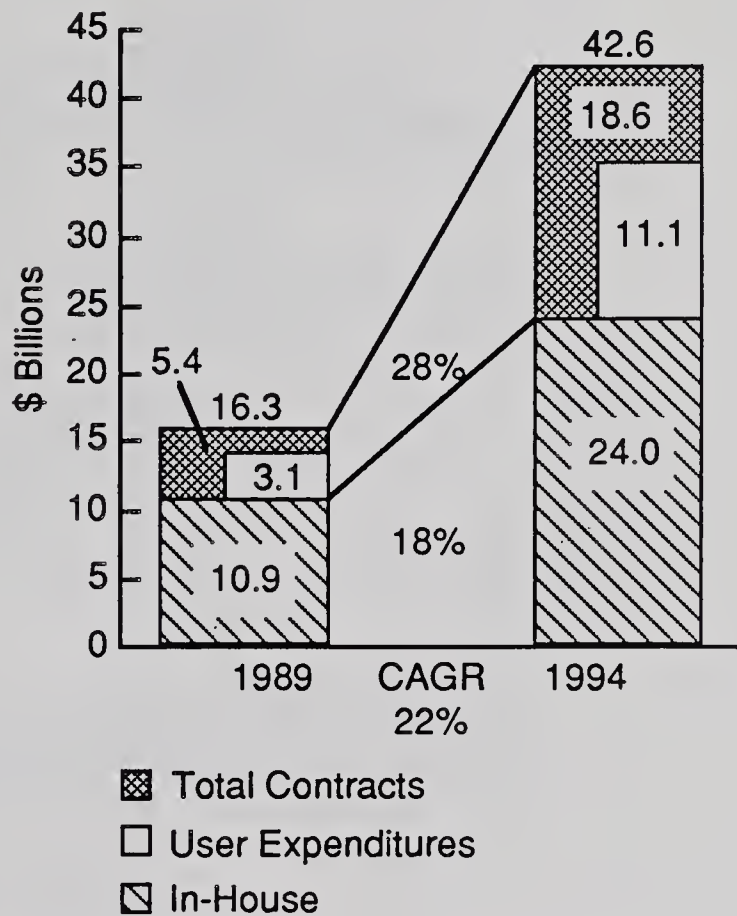
- Project size
- Complexity
- Unavailable specialized knowledge
- Time constraints
- Risk
- Team assembly/disassembly
- "Greenfield" situation (totally new applications)

Exhibit V-4 makes this point another way:

- Internally developed systems still account for about two-thirds of systems integration development expenditures.
- However, the growth of in-house managed integration is expected to be considerably lower than the growth of commercial systems integration.
- Even so, by 1994, over half of systems integration will still be conducted in-house. The size of the in-house market can still be the basis for favorable vendor growth to the end of the 1990s.

EXHIBIT V-4

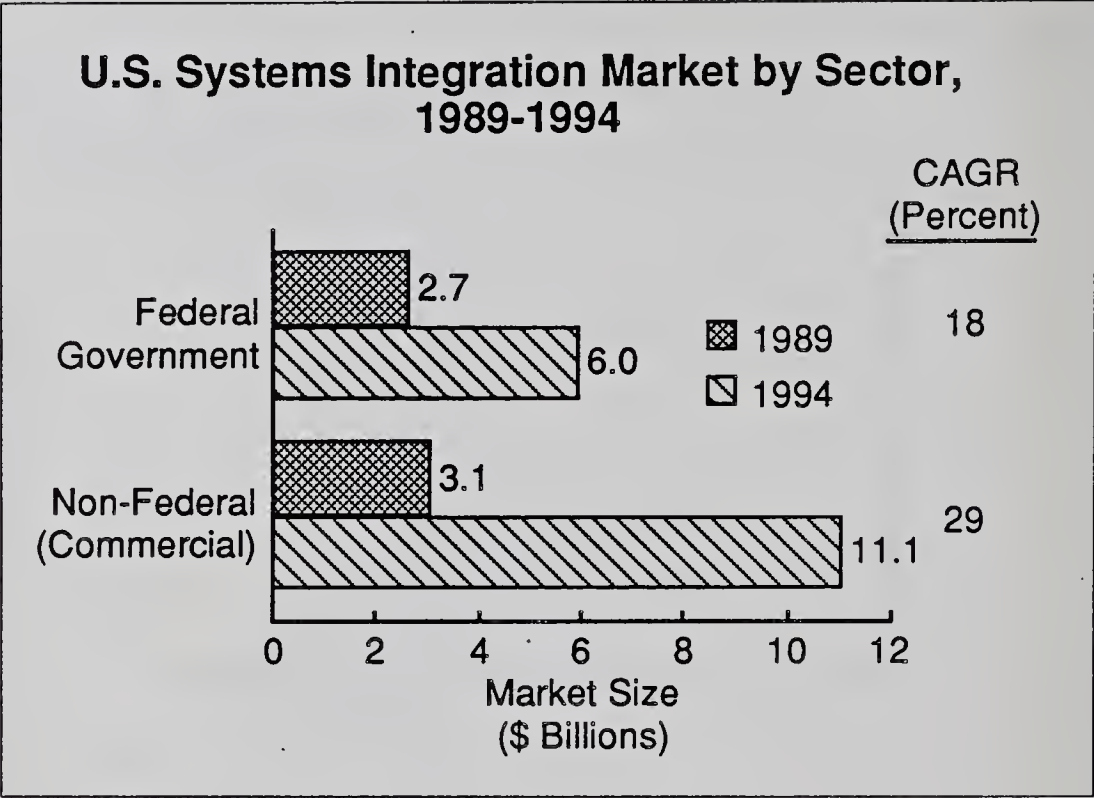
Commercial Systems Integration Project Value and Expenditures, 1989-1994



The systems integration market is attractive overall; however, some areas are more attractive than others:

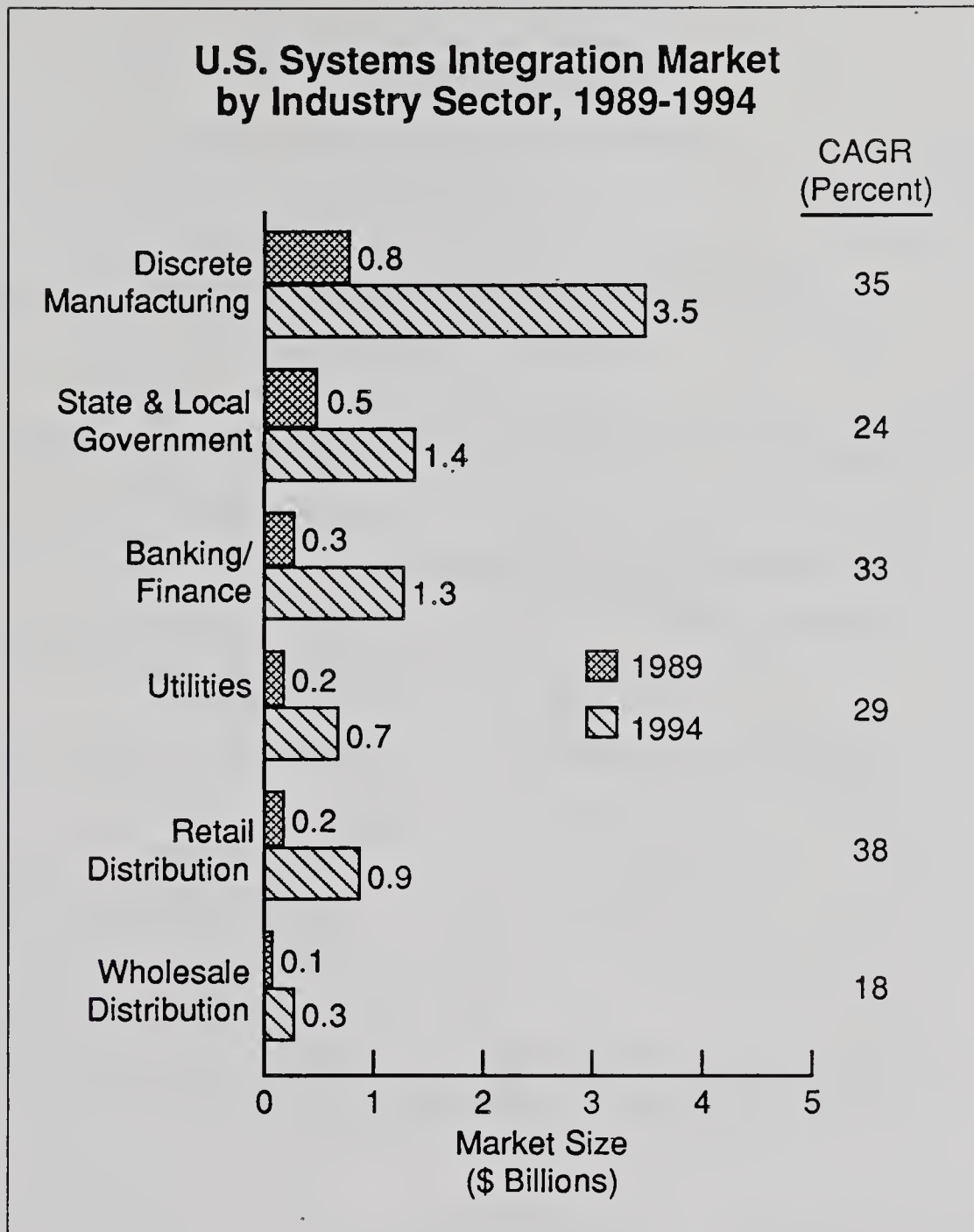
- Even before the current round of budget cuts, the federal market was projected to grow relatively slowly (see Exhibit V-5). Now, of course, even 18% growth may be the maximum possible.

EXHIBIT V-5



- Within vertical sectors, some sectors—such as discrete manufacturing and retail distribution—should have growth considerably above average. Others—such as state/local government and wholesale distribution—are projected to have less-than-average growth (see Exhibit V-6).

EXHIBIT V-6



Systems integration is a very competitive area:

- Hardware manufacturers, telecommunication companies, and aerospace companies see systems integration as an opportunity to leverage their skills, products, and traditional services in slower-growing sectors.
- Firms offering standalone professional services and software products view systems integration as a logical extension of their core businesses.

Exhibit V-7 shows examples of firms, by class of company, in the systems integration business. In some cases (i.e., Bechtel or aerospace

firms) systems integration activities may blend almost seamlessly into a company’s core business, making the identification of “true” systems integration difficult.

EXHIBIT V-7

Systems Integration Vendor Examples by Class	
Class	Examples
<ul style="list-style-type: none">• Hardware Manufacturers• Communications Companies• Professional Services Companies<ul style="list-style-type: none">- Consulting-based- IS Professional Services Systemhouse• Systems Operations• Aerospace Companies• Software Suppliers• Other	<p>IBM, DEC, Unisys, NCR, CDC, Motorola</p> <p>RBOCs, AT&T, Contel, GTE</p> <p>Andersen Consulting, Deloitte Touche, Coopers & Lybrand, Price Waterhouse, Booz-Allen</p> <p>AMS, CSC, CTG, SAIC, SHL</p> <p>EDS, Systematics, Litton, SCI, STM</p> <p>McDonnell Douglas, Martin Marietta</p> <p>Oracle, Sterling Software</p> <p>Bechtel, Deere Technology, Covia</p>

B

Integrated Services
Compared to
Standalone
Professional Services

In the prior chapter certain areas of professional services were singled out as being potentially attractive to customer service organizations, taking advantage of particular skills.

Systems integration, on the other hand, requires a breadth of skills and services that the typical customer services organization may not have or be willing to commit to immediately (see Exhibit V-8).

EXHIBIT V-8

Differences between Professional Services and Systems Integration

Category	Standalone Professional Services	Systems Integration
Project Duration	Can be continuous	Limited
Project Management Responsibility	Usually customer	Prime contractor
Computer Equipment Selection	Customer	Prime contractor for customer
Services Provided	Often a single service (e.g., software development)	Usually multiservice, including hardware/software integration
Pricing	Time and materials	Fixed-price
Item Purchased	Resources	"A solution"

However, there is considerable overlap in the skill sets required for standalone professional services and systems integration (see Exhibit V-9). The major factors affecting growth in the overall professional services market include:

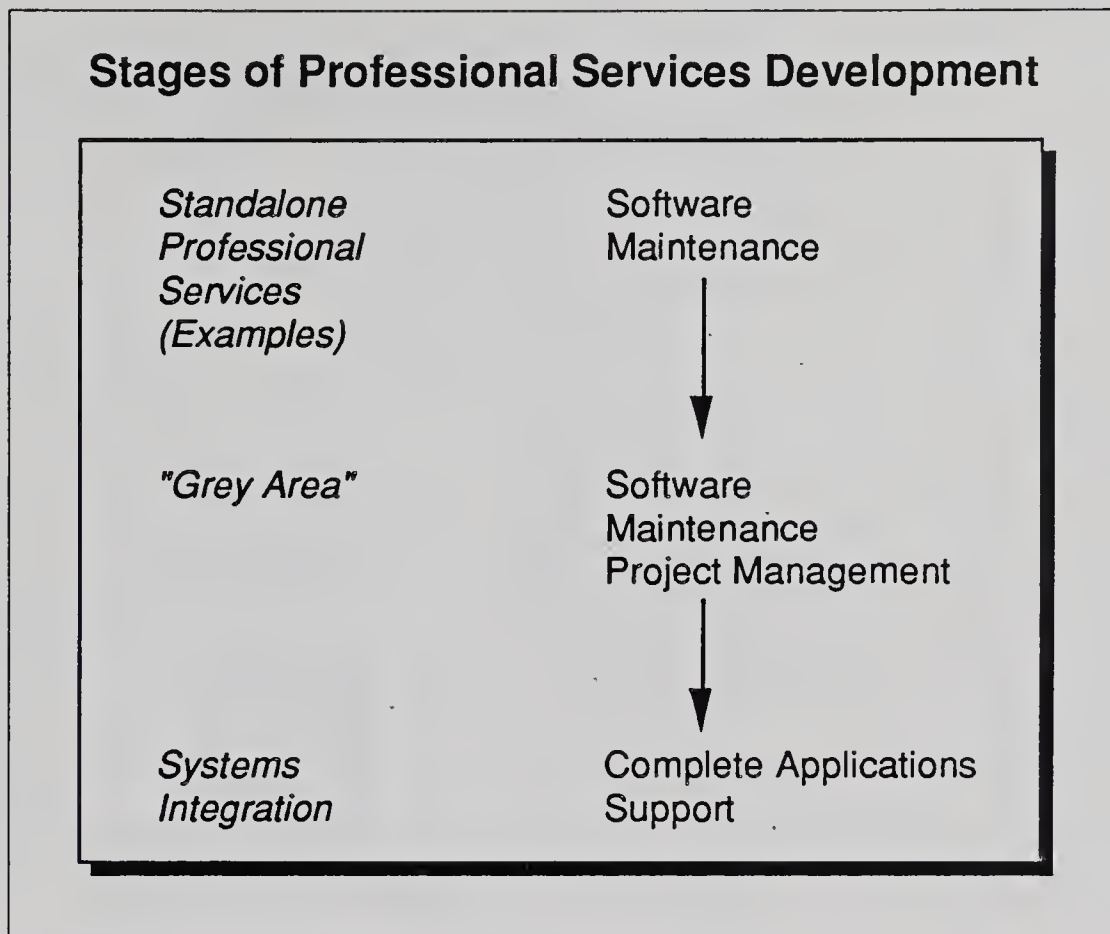
- Individually delivered technical skills becoming commodities
- Importance of planning/strategy consulting
 - Noncommodity
 - High growth
 - Possible lead-in to subsequent work
- Importance of systems integration
 - Unites higher and lower value-added services
 - Adds value to commodity-like skills
 - Added value from project management

EXHIBIT V-9

Professional Services Delivery Alternatives		
Professional Services Components	Individual Professional Services	Systems Integration (Professional Services)
Consulting: Systems Planning/Strategy	X	X
Consulting: IT Management	X	X
Systems Development	X	X
Integration Services		X
Education/Training	X	X
Systems Operations	X	

The aforementioned factors suggest a strategy of building on a core of one or more standalone professional services and expanding into more of a systems integration environment, perhaps by passing through a “grey area” as skills and market confidence expand. Exhibit V-10 illustrates this process.

EXHIBIT V-10



C

Turnkey Systems

The professional services component (custom software) of the turnkey systems market is relatively attractive from the standpoint of market numbers (see Exhibit V-11):

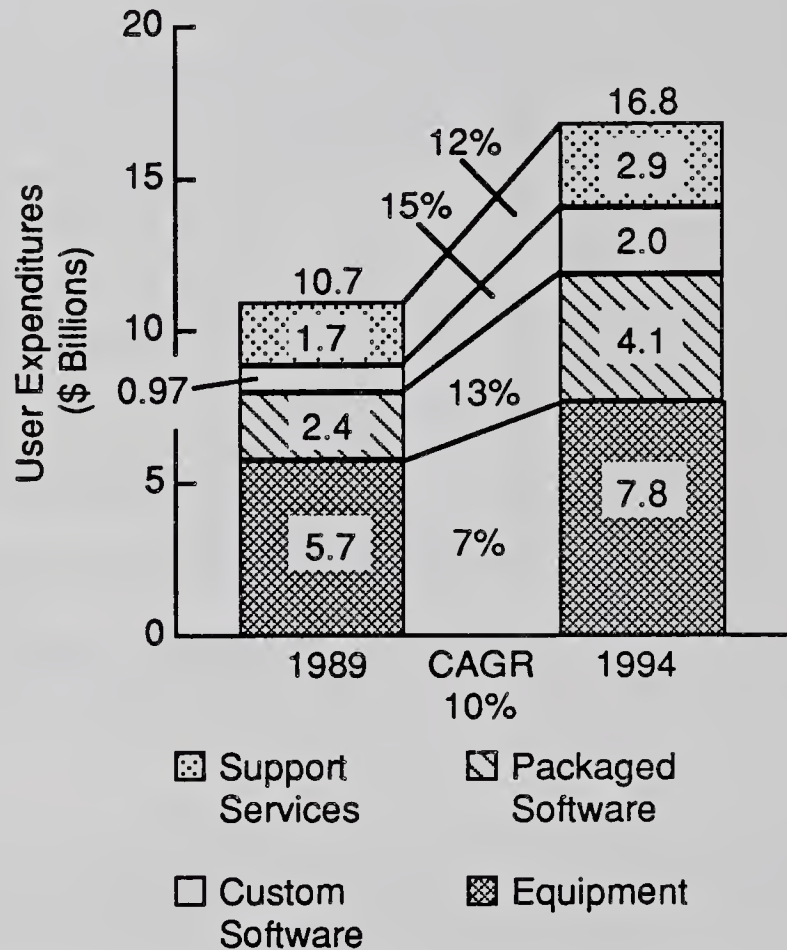
- Expenditures for this component, custom software, are approximately \$1 billion.
- Growth should be about 15%. (Note: This is above the other components of turnkey systems.)

Turnkey systems do share certain attributes with systems integration:

- Prime contractor's role
- Multiple vendors involved
- Equipment delivery
- Software customization
- Installation, training, and support
- Post-installation support

EXHIBIT V-11

Turnkey Systems Market Forecast by Product and Service Component, 1989-1994



However, the differences are considerably greater (see Exhibit V-12). The most important difference is that the customization involved in turnkey systems is much less than in systems integration (see Exhibit V-13).

Most importantly, from a business standpoint the product customization is rarely performed as a separate function. Typically, a particular applications software product is being modified:

- Modification requires in-depth knowledge of the package and industry setting.
- Generally speaking, the turnkey product company works very closely with the customizer (where the customizer is independent).

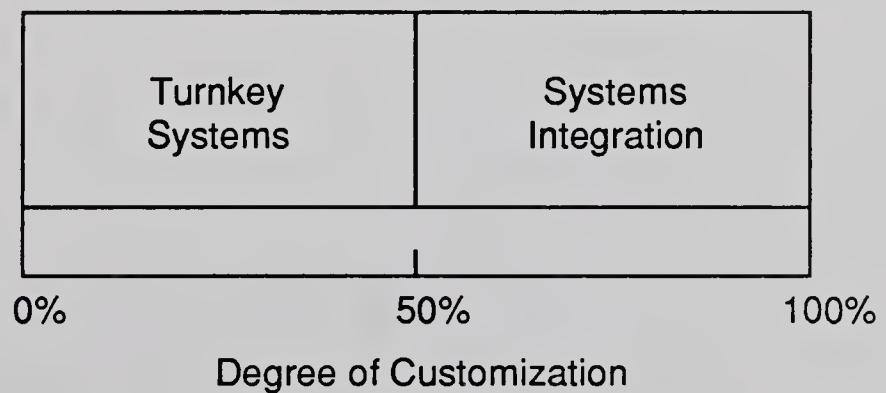
EXHIBIT V-12

Differences between Systems Integrators and Turnkey Systems Vendors

Systems Integrators	Turnkey Systems Vendors
Strategic design & consulting	Tactical consulting
Multiyear effort	Single-year time span
High level complexity	Modest complexity
Software development	Software products
High cost	Moderate cost
Large project management skills	

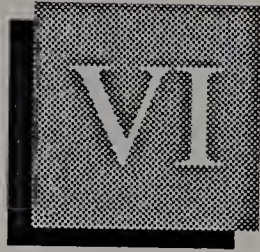
EXHIBIT V-13

The Customization Spectrum

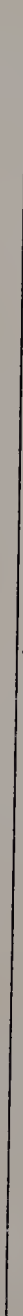


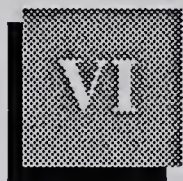
- Customizers are often very small professional services firms.

INPUT is not aware of any large independent professional services firm that has built a business out of turnkey customization. Therefore, INPUT classifies this as a secondary opportunity.



Systems Operations





Systems Operations

A

Overview

The systems operations market is made up of two closely related methods of delivery: professional services and processing services.

- In the professional services mode of systems operations, vendor-provided personnel plan, manage, and operate client-owned equipment. Professional services is the slower growing of the two modes, with a compound annual growth rate of 13%. This operating mode is much more prevalent in the federal market, where it represents over 50% of user expenditures for systems operations services.
- In processing services, the vendor provides the full range of planning, management, and operations services for the client using vendor-owned equipment on vendor or client premises. This mode of systems operations is the faster growing of the two, with a compound annual growth rate of 18%. It is clearly the dominant mode of service in the commercial market, where it represents over 85% of end-user expenditures.
- Exhibit VI-1 shows the expected growth for each segment.

EXHIBIT VI-1

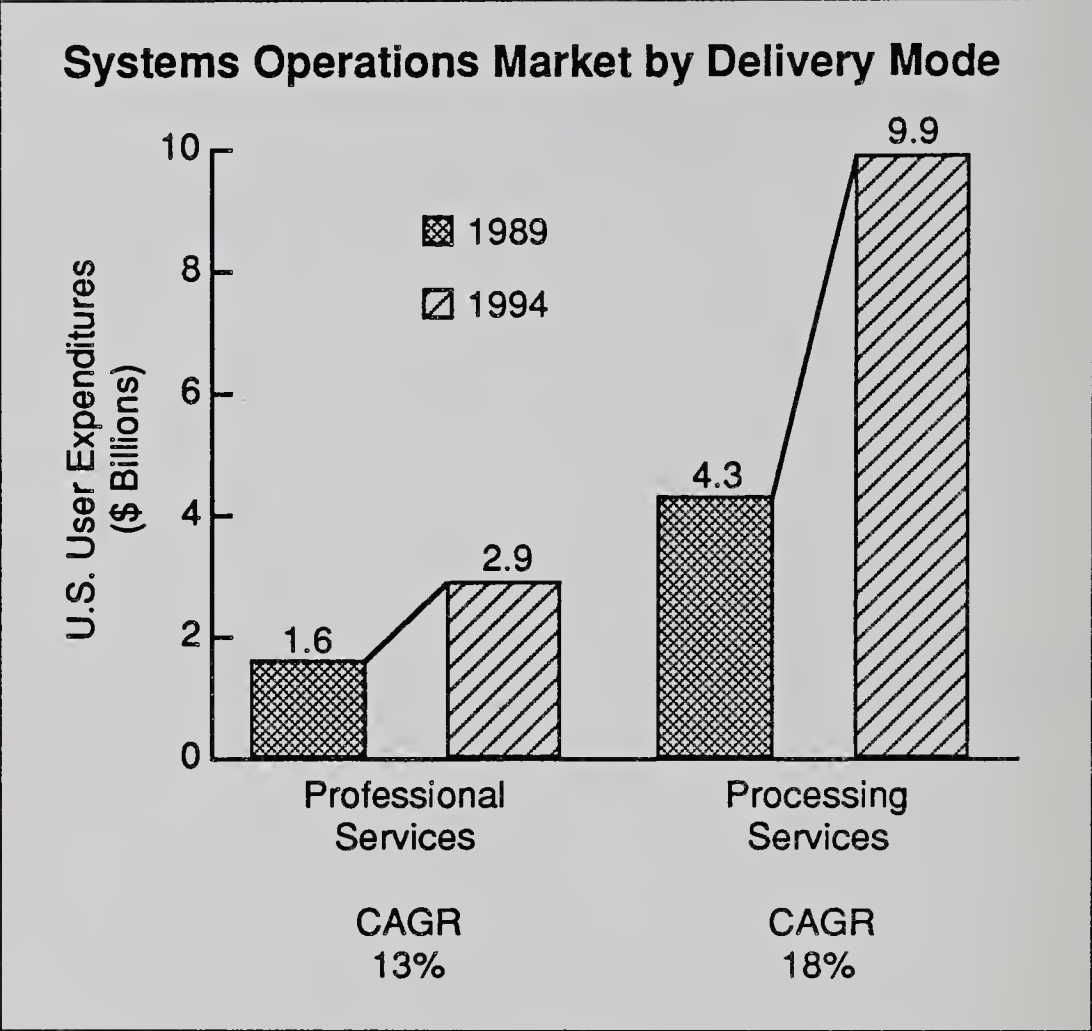


Exhibit VI-2 illustrates the differences between these two service delivery submodes. The main difference between these two submodes is more related to business than to operations:

- Transferring hardware ownership simplifies management for the customer. In some cases this can be financially beneficial to a customer if the systems operations vendor buys equipment for more than its book value.

EXHIBIT VI-2

Characteristics of Types of Systems Operations

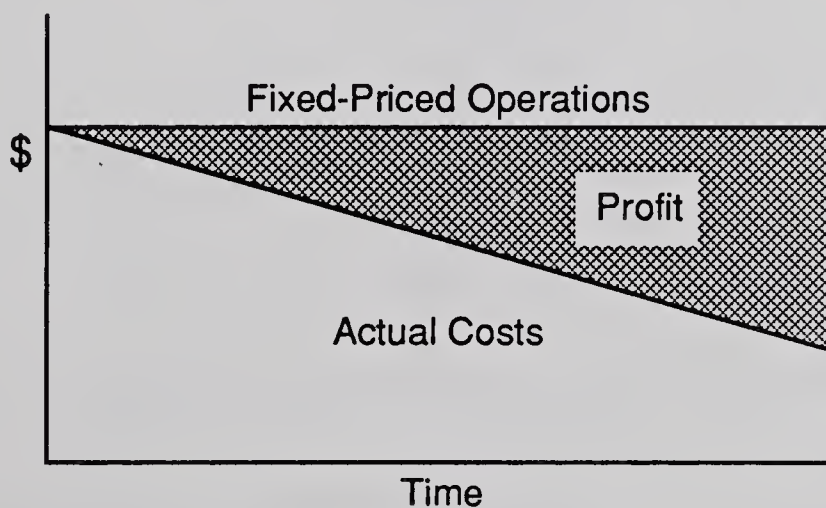
Location of Main Computer	Ownership of Main Computer	
	Vendor	Customer
Vendor Site	Processing Services	Professional Services
Customer Site	Processing Services	Professional Services

Dominant modes

- At the same time, running customer software on the vendor's hardware gives the vendor much more flexibility and, potentially, significant economies of scale. This is the rationale for systems operations vendors being able to promise to cut operations expense 20 to 30% in the first year and keep cost growth modest for subsequent years (see Exhibit VI-3).

EXHIBIT VI-3

Systems Operations Efficiency Yields Profits



However, the actual skills required to perform the systems operations work are very similar, whether the professional services or processing services delivery mode is employed (see Exhibit VI-4). The only significant difference is a heightened importance in having access to low-cost equipment and being able to support high workload levels. This duality between the two types of systems operations opens up an additional market opportunity beyond the more narrowly defined systems operations/professional services segment.

EXHIBIT VI-4

Systems Operations Skill Sets		
Skill	Processing Services	Processing
Computer operations staff		
- Capabilities	X	X
- Low cost	X	X
Network management		
- Staff	X	X
- Tools	X	X
Performance management	X	X
Disciplined management style	X	X
Equipment		
- Low-cost sourcing		X
- Load management		X

B

Customer Motivations Many of the recent systems operations contracts are due to financial motivation:

- Gaining a short-term “hit” by selling equipment for more than book value. Vendors do this to encourage customers to make the change from in-house to vendor-provided systems operations.

- Gaining longer term benefits by means of guaranteed lower operating costs

It is not yet clear if systems operations vendors will be able to deliver improved performance at the same time that they lower costs. The experience of the early adopters will help to educate the market in this respect.

A “wild card” in this is the position of systems that provide a company competitive advantage. Applications that offer competitive advantage have several of the following characteristics:

- High payoff
- Unique/proprietary components
- Integrated with business operations
- Need to react fast to changing conditions

In many cases, companies will not want a third party to operate a system that provides competitive advantage. (Although if the financial pressures are high enough, as in the case of Continental Airlines and its reservation system, even competitive advantage systems can be hired off.)

In addition, there are very powerful subjective factors that can influence the systems operations decision-making process, as illustrated in Exhibit VI-5.

EXHIBIT VI-5

Subjective Factors Affecting Systems Operations Decisions

Factor	Factor Rating: Impact on Operations Choice	
	In-House Operations	Vendor Operations
Current customer satisfaction	High	Low
Attitudes toward IS department	High	Low
Company/division turmoil	Low	High
Internally focused mindset	High	Low

C

Opportunity Analysis Exhibit VI-6 illustrates the areas of maximum market potential:

- Cost savings should be attractive (i.e., at least 20%)
- The potential for improvement in ongoing operations should exist. The more this can be demonstrated, the higher this can be rated; such demonstrations are generally client specific.
- All things being equal, any system that provides competitive advantage should be treated separately, and perhaps even excluded initially if that is feasible.

EXHIBIT VI-6

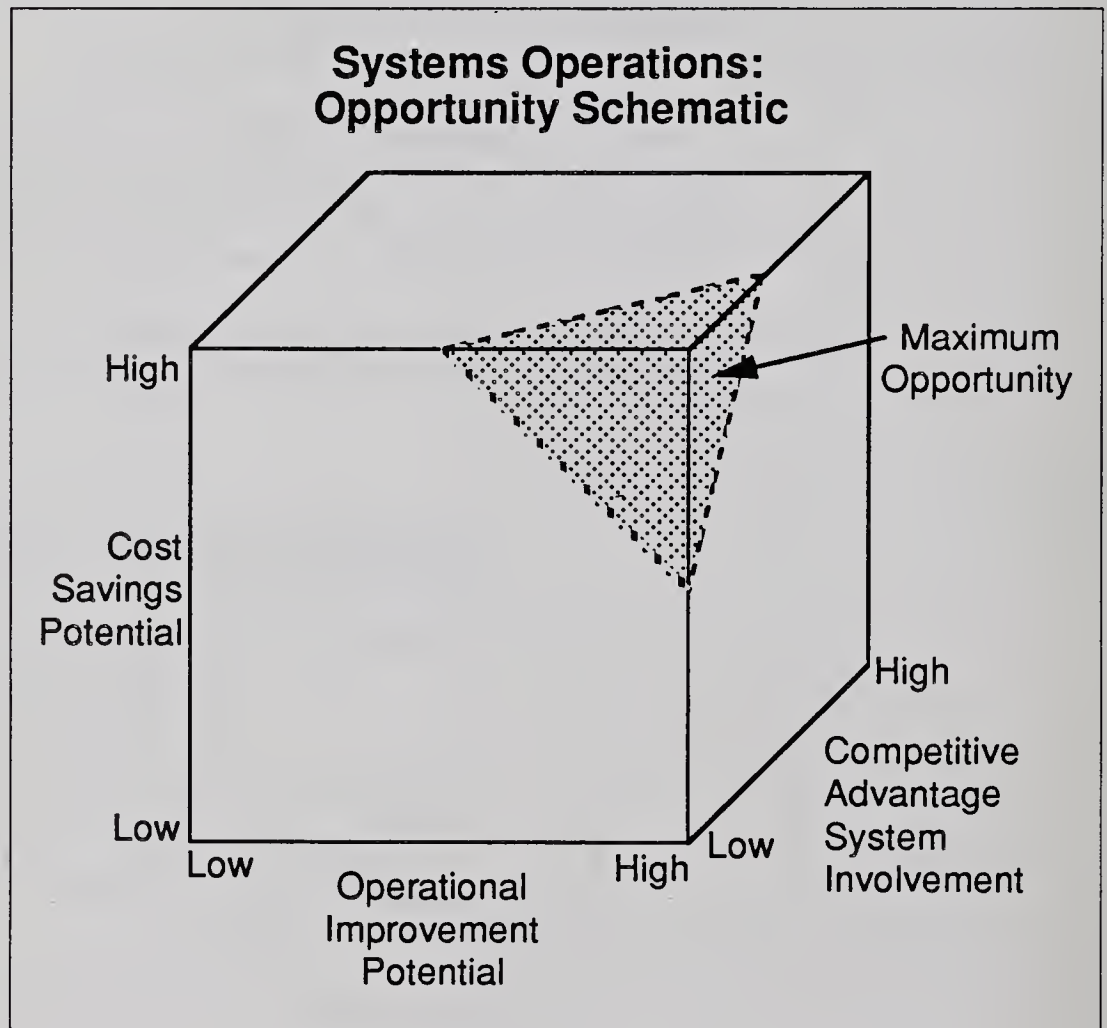


Exhibit VI-7 gives more specific examples of systems operations opportunities.

EXHIBIT VI-7

Opportunity Examples

- Recently acquired divisions
- Operations being prepared for divestitures
- Companies under financial pressure
- Inefficient operations
- Technical laggards
- IS management turnover
- Relatively stable applications

It is possible to enter this market incrementally, building on particular skills and expanding into a longer term, usually higher-value-added relationship. Exhibit VI-8 (which expands the similar example for systems integration in Exhibit V-10) illustrates an example of such an entry strategy that leads ultimately to a higher-value-added relationship.

Outside the federal arena, this market is still going through a definition process. While there are major vendors already actively involved (see Exhibit VI-9), this sector is still open to new entrants. Part of the reason is that there are still several business issues that are not fully resolved:

- The hardware cost curve assumptions in Exhibit VI-3 seem reasonable in light of history. However, there are certain risks associated with planning a business based on improved price/performance for five or more years in the future.
- Similar assumptions are being made about squeezing out personnel expense by means of larger data centers and/or increased automated operations.
- Vendors have to be able to control the unit costs of personnel as well—for example, by moving operations to lower-wage areas or subcontracting to lower-cost providers.

EXHIBIT VI-8

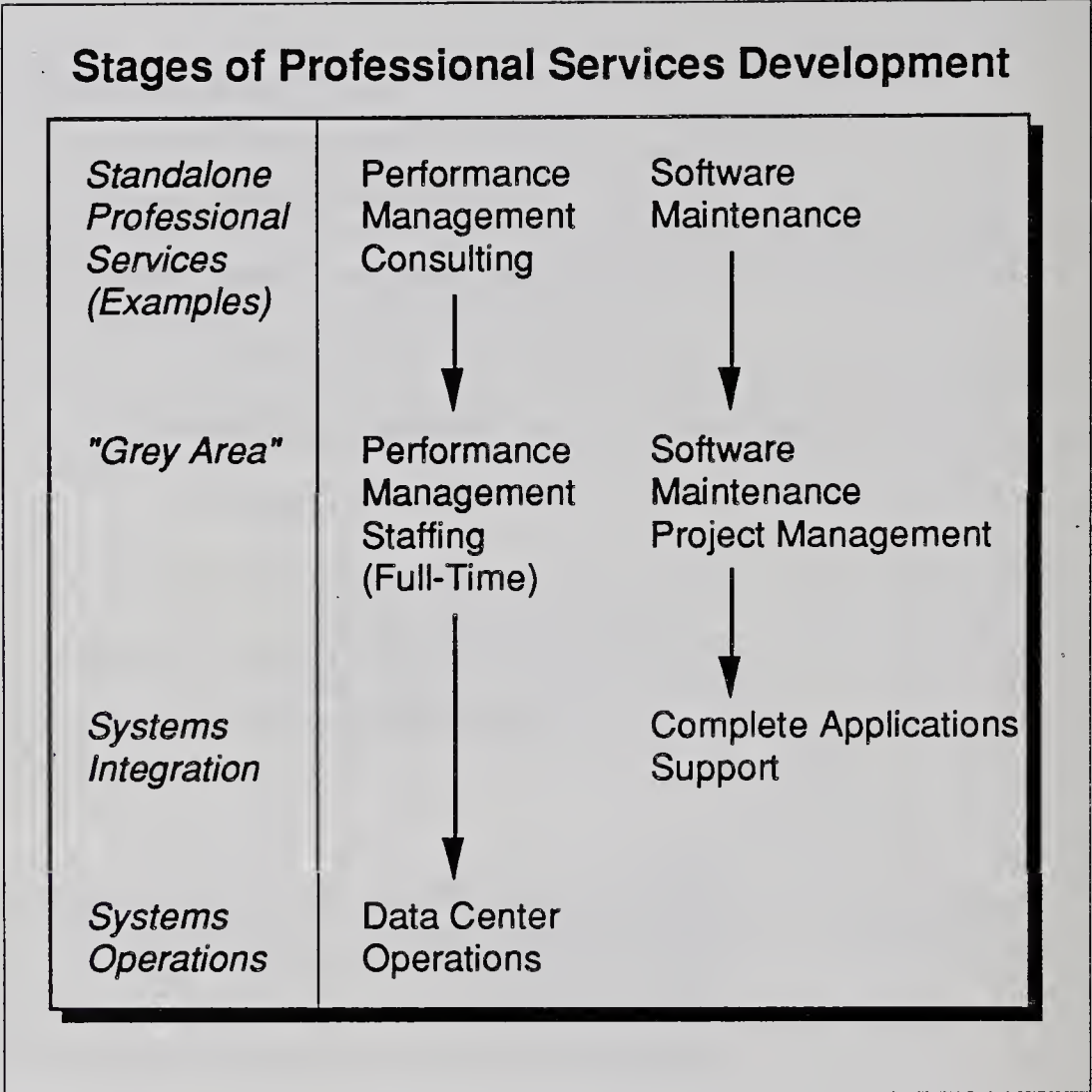
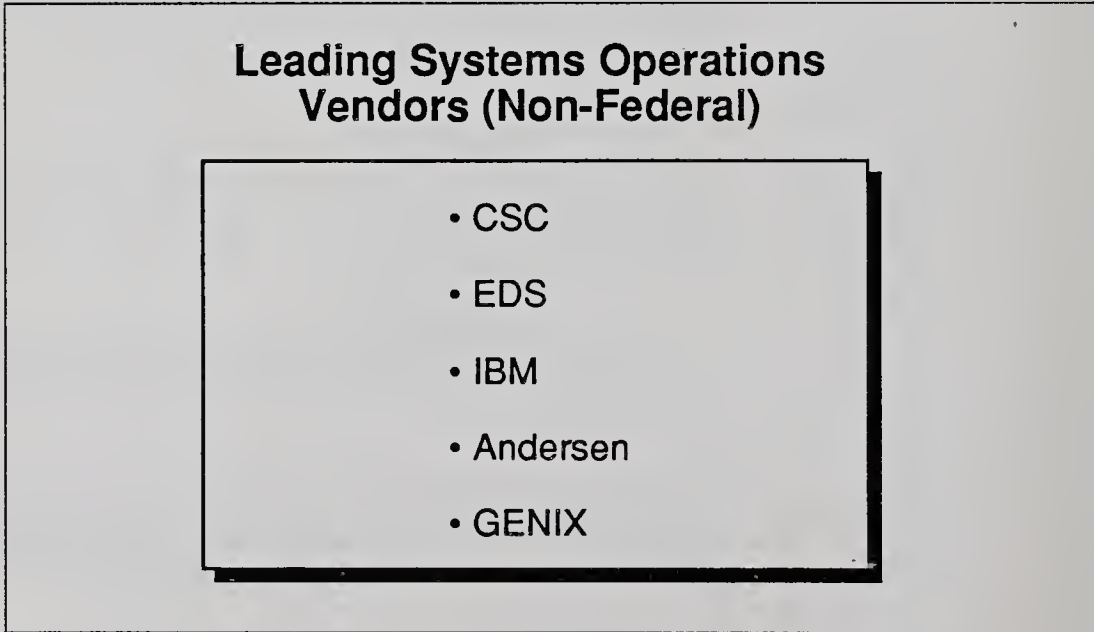


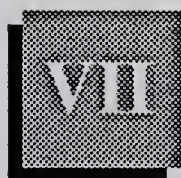
EXHIBIT VI-9



- Perhaps the most significant problem/opportunity is the issue of add-ons and other changes in user needs. There is no process that can establish an exact price for such changes ahead of time.
 - As in change-orders on a construction project, these add-ons can represent an opportunity for increased revenue, possibly at higher margins.
 - However, just as in some construction projects, the change process can create controversy and can result in customers' feeling that they are being taken advantage of.
 - Vendors that learn, through trial and error, how to deal successfully with this issue will be on their way to overall success.



Conclusions and Recommendations



Conclusions and Recommendations

This last chapter contains four sections:

- A summary of the opportunities found in individual professional services components
- An assessment of critical success factors
- An evaluation of the impact of a recession on individual professional services components
- Recommendations

A

Summary of Opportunities

In the previous chapters, opportunities were assessed for individual professional services components. Exhibit VII-1 provides a summary of the earlier findings.

- Consulting can be a very good opportunity, depending on the specific skills that a customer service organization can offer (including sales and marketing skills; see section B, this chapter).
- Applications development for new systems is highly competitive, and margins are often low. Unless a customer service organization has a set of unique skills or some other edge, this is an area to be treated with caution.
- On the other hand, providing applications support for existing systems (i.e., maintenance) can be a good opportunity.
 - Competition is still diffuse.
 - Project management skills will often be the bottleneck, so these should be carefully selected and assessed.

EXHIBIT VII-1

Professional Services Opportunities for Customer Service Organizations: Summary

Professional Services Segment	Opportunity	Comment
Consulting	Fair/good	Depends on specific skills available
Applications Development (New Systems)	Limited	Highly competitive
Applications Support (Existing Systems)	Good	Need project management and some technical skills
Systems Integration	Limited	Enter at later phase
Turnkey	None	Tied too closely to software product offerings
Systems Operations	Good	Competitive situation still fluid

- Systems integration opportunities only exist now for a relatively few customer service organizations. The skills and marketplace image required here almost always require a concerted building effort.
- Turnkey-related professional services will rarely represent a separate opportunity.
- Systems operations represents a good opportunity for many professional services organizations.
 - The market is still evolving.
 - The skills required are relatively close to those that exist in—or can be obtained by—customer service organizations.

B**Success Factors**

Before entering into or expanding in a business area, the critical factors for success should be understood.

- Exhibit VII-2 lists the factors needed to succeed in offering consulting services. Note the preponderance of general knowledge required as well as the importance of senior contacts.

EXHIBIT VII-2**Consulting-Related Success Factors**

- Executive contacts
- Senior IS contacts
- Management consulting skills
- Management consulting image
- Successful IS strategy assignments
- Comprehensive systems knowledge
- Knowledge of industry business
- Knowledge of IS issues in industry
- IS management knowledge
- Knowledge of IS use in industry
- Comprehensive IS operations knowledge
- Knowledge of IS development
- Broad technical skills

- Exhibit VII-3 has a similar list (overlapping somewhat with the prior list) of factors needed to succeed in the development and operations areas.

EXHIBIT VII-3

**Development/Operations-Related
Success Factors**

- Executive contacts
- Operations department contacts
- Senior IS contacts
- Project management/organization skills
- Broad technical skills
- Proposal preparation
- Internal controls
- Alliance management
- Development methodology
- Sources of technical skills
- Sources for low-cost equipment
- Pricing strategy
- Systems operations management knowledge

Exhibit VII-4 combines and expands these lists by assessing the relative importance of consulting (both strategy and IS planning), development/maintenance, and systems operations.

- Note the importance of contacts at various levels and for all activities.
- Strategic consulting places much more emphasis on general consulting skills compared to IS planning consulting, which is more nuts-and-bolts oriented.
- Operating department contacts have become critical in new development activities (and to a lesser extent in applications support) as the operating units gain more control over applications.
- Proposal preparation is a key selling aspect for both development and operations work, with pricing especially important for systems operations.

EXHIBIT VII-4

Professional Service Success Factors: Relative Importance by Functional Area

Factor	Strategy	IS Planning	Development/ Support	Systems Operations
Executive Contacts	++	+	+	+
Senior IS Contacts	++	++	++	++
Management Consulting Skills	++	+		
Management Consulting Image	++			
Successful IS Strategy Assignments	++			
Comprehensive Systems Knowledge	+			
Knowledge of Industry Business	+			
Knowledge of IS Issues in Industry	+		+	
IS Management Knowledge		+		
Knowledge of IS Use in Industry		+		+
Comprehensive IS Operations Knowledge		+		
Knowledge of IS Development		+		
Operating Dept. Contacts			++	
Project Management/ Organization Skills			++	
Broad Technical Skills		+	+	
Proposal Preparation			++	++
Internal Controls			++	+
Alliance Management			+	+
Development Methodology			+	
Sources of Technical Skills			+	
Pricing Strategy			+	++
Systems Operations Management Knowledge				++
Sources of Low-Cost Equipment				++

+ = Important, ++ = Very Important

C

**Impact of Recession
on Professional
Services**

As of this writing, it is unclear whether the U.S. is entering a recession and, if so, how serious it will be.

There is little question that a recession—mild or severe—will have a negative impact on the product market (hardware and, to a lesser extent, software). However, the market for professional services will almost certainly respond differently, based on the experience in the last major recession in the early 1980s.

It is also important to distinguish between the effects of a mild or severe recession: In a mild recession, companies will often go ahead with plans, but in a more cost-effective fashion. In a severe recession, budgets will be cut in absolute terms and projects may be indefinitely postponed.

In examining each of the types of professional services, the following tentative conclusions emerge:

- Consulting overall would not be affected in any significant way in a mild recession; marginal activities might be postponed, but this would be counterbalanced by the planning needed to deal with the impact of spending downturns elsewhere in the organization. In a severe recession, expenditures for consulting would be among those cut back the most.
- The effect on new development activities would depend on whether they were for standalone professional services or systems integration.
 - Standalone development would probably benefit in a mild recession as a result of head-count restrictions: the work would still have to be done. In a severe recession, there would be budget constraints as well; however, hiring outside services would still offer more flexibility than hiring permanent staff.
 - In a severe recession, systems integration could suffer seriously as large projects were postponed indefinitely.
- On the other hand, support of existing applications would have to continue. To the extent that an outside vendor could convince a customer that contracting out could provide equal or better service at a lower cost, a recession would be positive.
- Systems operations should thrive in a mild recession, as the economic motivations for replacing in-house with vendor operations become even more pronounced. Business would probably fall off somewhat in a severe recession, as general uncertainties could make some customers and vendors less willing or able to enter into long-term commitments.

Exhibit VII-5 summarizes the likely recessionary impact. This addresses the effect on volume of work. There could be an additional impact on profitability, particularly for standalone professional services.

EXHIBIT VII-5

Impact of Recession on Selected Professional Services

Professional Service Type	Impact on Volume of Work by Recession Type	
	Mild	Severe
Consulting	*	--
New Development		
• Standalone Professional Services	+	*
• Systems Integration	-	--
Applications Support	+	+
Systems Operations	++	+

Key:

- ++ Very Positive
- + Positive
- * Neutral
- Negative
- Very Negative

D

Recommendations

INPUT sees both applications support and systems operations as opportunities that customer service organizations should consider. These opportunities should be assessed objectively, especially in light of the success factors previously described. INPUT's research has identified three reasons for failure in professional service organizations undertaking complete tasks:

- Work was bid for with inadequate understanding/specifications.

- Jobs were beyond a firm’s capabilities
- Clients were not involved sufficiently once work was underway.

These are yellow flags, not red flags. Customer service organizations planning for professional services entry/expansion should do the following:

- Focus and specialize in a limited number of areas, especially in the beginning.
- Perform an objective assessment of capabilities needed to perform the targeted business both well and profitably.
- Develop a realistic plan for filling holes uncovered in the capabilities assessment.
- Develop partnerships and alliances, where necessary, to fill in skills or marketing gaps.
- Make sure the marketing plan is as well thought through as the technical plan.

Exhibit VII-6 summarizes the recommendations' key points.

EXHIBIT VII-6

Recommendations

- Focus
- Assess capabilities
- Fill holes
- Develop partnerships
- Stress marketing

